An Analysis of the Audience Impact of Page One EPG Prominence

A Report for Ofcom

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Non-Confidential Version

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1. Executive Summary

As set out in the Introduction (Section 2), the objective of this report is to assess the viewing impact of EPG prominence by analysing actual examples of EPG reshuffles, and to use this evidence to generate a range of possible viewing impacts for ITV1 and Five, were they to lose their prominent page one slots and move to the bottom of the Entertainment sections on the Satellite, Cable and Freeview EPGs.

In Section 3 we provide an overview of the EPGs under consideration, including details of the number of channels in the different EPG genre sections and what proportion of viewing these account for. We also investigate whether or not there is any relationship between a channel's Share of viewing and its rank within a given EPG genre section. We find that, even when outliers are excluded, there is generally a negative correlation between a channel's performance and its EPG positioning, whereby channels further down a given genre section generally do worse than those nearer the top. However, apart from establishing this broad fact, there is a limit to what a correlation analysis between EPG positioning and channel performance can tell us about the likely underlying causalities involved.

In Section 4 we review the evidence from actual EPG movements and find that 28 of the 33 examples looked at (85%) support an argument that EPG positioning affects audience performance, 4 examples are inconclusive and 1 supports an argument that EPG positioning does not affect audience performance. On balance, the evidence therefore strongly supports the view that EPG positioning is likely to have a significant impact on a channel's performance. Based on this evidence, we consider that if a major digital entertainment channel suffered a significant loss of EPG prominence, this would be associated with a 10-20% drop in audience Share on the Freeview platform and a 20-40% fall in audience Share on the Sky and Virgin Media platforms.

In Section 5 we outline our methodology for generating a range of audience impact forecasts for ITV1 and Five resulting from a significant loss of EPG prominence. Our methodology combines the empirical evidence for our analysis of actual EPG change moves with an algorithm designed to take account of the extent to which the uniqueness of the content and overall brand strength of ITV1 and Five are likely to mitigate the viewing impact of a significant move down the EPG. This results in a number of scenario options that vary in the extent to which they are tied to the available empirical evidence, and therefore also as to how speculative they are. For Five, the range of predicted outcomes generated by the central scenarios gives a minimum performance loss of 6.5% and a maximum loss of 23.9%. For ITV1, on the other hand, the corresponding minimum predicted performance loss is close to negligible at 0.3%, with the maximum predicted loss still remaining relatively small at 2.4%. That being said, a much more speculative (though

not totally implausible) scenario puts the likely loss for ITV1 at between 8.4% and 16.8%. The corresponding loss under the same scenario for Five is somewhere between 13.4% and 26.8%.

2. Introduction

Channel 3 and Channel 5 licence holders are required to make payments to the Treasury in return for operating a public service broadcasting (PSB) licence. Ofcom is carrying out a review of these payments for seven of the regional licences held by ITV plc, UTV plc's licence in Northern Ireland and Five's channel 5 licence.[1] These payments will be determined by Ofcom's view of the amount the licence holders would have bid were the licences being granted afresh in a competitive tender.

One of the benefits of holding these licences is the right to an appropriate degree of prominence on EPGs, and so Ofcom is interested in understanding the potential audience impact of having this right to appropriate prominence, which in turn could help it assess the potential value of this right as part of its review.

To inform this analysis, Ofcom has commissioned Attentional to assess the audience impact, if any, of occupying a prominent (i.e. page one) position on EPGs across all the main platforms, i.e. Satellite, Cable and Freeview.

We begin with an introductory overview of the three EPGs under consideration. This is followed by a study of 33 actual examples where channels have changed EPG position in recent years, to see whether or not it is possible to establish statistically significant causal links between positioning changes and channel performance. For 32 of these 33 examples we were also able to run the benchmark figures for the same channels on other EPGs where their positioning was unaffected, or at the very least for a primary channel on the same EPG where only the timeshifted channel was moved. This is important because it allowed us to take into account other factors that can influence audience performance, such as scheduling changes, which would be expected to affect channel performance across all platforms on which it was broadcast. The EPG-change examples covered, for each of the three EPGs under consideration, are summarised in Section 6.3 (Confidential Appendix C) below.[2]

The bulk of the EPG change examples (25 of the 33 covered) are for the Sky EPG, reflecting the fact that Sky EPG changes are much easier to trace and verify. On the Sky EPG there are also far fewer problems with significant confounding influences. On the Freeview EPG, for example, all major reshuffles require viewers to re-tune their set-top boxes (or integrated Freeview TVs), and this often leads to significant technical problems (as attested to by numerous complaints on the relevant internet forums), making it much harder to isolate the likely viewing impact of the relevant reshuffles.

[1] See http://stakeholders.ofcom.org.uk/consultations/review_c3_c5_licences/

[2] Attentional has been collecting and analysing data on EPG changes for a number of years, and these now constitute a major proprietary resource. Consequently, some sections of the Appendix are marked as confidential.

For the Virgin Media EPG, the problem has been that reshuffles are not as well documented as those on the other EPGs, and (despite their merger in 2006, leading to the creation of Virgin Media) often only relate to either ex-Telewest or ex-NTL customers. As these groups cannot readily be separated out in the BARB data, it is again much more difficult to assess the likely underlying viewing impact of such reshuffles. Despite these difficulties, however, our analysis does cover 4 reshuffle examples each for the Virgin Media and Freeview EPGs, and this goes some way towards providing a more balanced picture.

Our main criteria for selecting an EPG change example for further analysis was that we could validate and (as far as possible) quantify the EPG move taking place, and that, even where significant confounding influences were likely to come into play, there was still a reasonable chance for us to be able to identify and isolate an EPG change viewing impact if present. While the number of examples we have analysed is not an exhaustive selection from recent years, it is important to note that we have not simply selected these examples because they provide support for an argument that EPG positioning has a significant impact on a channel's performance. Indeed, a number of the aforementioned examples only provide weak support for this thesis, while for others it is impossible to isolate the impact of the EPG change due to the presence of a large number of confounding factors.

Another factor to consider is that, although there are a number of examples of channels losing page one prominence in the lower genre sections of the Sky EPG, we have only been able to identify one relevant example of a channel moving out of the first page of the Entertainment section (i.e. the first page of the EPG as a whole) for any of the three EPGs under consideration.[3] To supplement the evidence from our analysis of actual EPG reshuffles, we therefore also compare the performance of channels across two different EPGs where they happen to be on the first page of one EPG but further down on another. We have also been able to analyse one international example of a channel gaining page one EPG prominence. This involved the Irish digital channel, 3e, moving from number 182 to 105 on Sky's Irish EPG, an upward move of approximately 70 channel ranks, from the middle of page 8 to the middle of page 1 of the Entertainment section.

As part of the analysis it is also important to establish whether or not the impact of any EPG change is likely to be permanent. The highly competitive nature of the UK television market however, coupled with the rapid growth in multichannel penetration and other technological innovations, makes it very difficult to isolate the viewing impact of an EPG change across a longer performance timeframe. We have found from experience that restricting the analysis to six weeks either side of an EPG change for individuals channels (and 3-months either side of an EPG change for channel groups) represents

[3] This was UKTV's Entertainment channel reshuffle on the Sky EPG (to accommodate the launch of their new channel 'Watch') which took place on 07/10/2008, and involved G.O.L.D.+1 being moved from the bottom of the first page to the top of the 4th page of the Entertainment section.

the best working compromise, whereby a statistically significant impact is likely to represent a permanent underlying structural change. Nevertheless, to consider any additional evidence for the likely persistence of the viewing impact of an EPG change, we also analyse a sample of the most relevant EPG change examples over a longer timeframe.

Having analysed and presented the evidence, we then use this to create an evidence based model for estimating a likely range of viewing impacts on ITV1 and Five, were they to lose their prominent places on the first pages of the Sky, Virgin Media and Freeview EPGs, and experience a significant fall down each EPG, for example by moving to the bottom of their respective Entertainment sections.

As part of the impact assessment we also take account of the extent to which the uniqueness of the content and overall brand strength of ITV1 and Five are likely to mitigate the viewing impact of a significant move down the EPG.

3. An Overview of the Primary EPGs in the UK Market

In this section we provide an overview of the EPGs under consideration, including details of the number of channels in the different EPG genre sections and what proportion of viewing these account for. We also investigate whether or not there is any relationship between a channel's Share of viewing and its rank within a given EPG genre section. We find that, even when outliers are excluded, there is generally a negative correlation between a channel's performance and its EPG positioning, whereby channels further down a given genre section generally do worse than those nearer the top. However, apart from establishing this broad fact, there is a limit to what a correlation analysis between EPG positioning and channel performance can tell us about the likely underlying causalities involved.

3.1. Freeview, Virgin Media and Sky: The Key EPG Facts

Our analysis will focus on the EPGs of the three primary television distribution platforms operating in the UK: Sky (Digital Satellite), Virgin Media (Cable) and Freeview (Digital Terrestrial Television).[4] As the EPGs for these platforms are constantly evolving, with new channels being added, others going off-air, re-branding or moving into different EPG slots, even a very recent overview is likely to be out of date the moment it is published. Furthermore, none of the EPG reshuffles we will be analysing as part of this report are dated later than the summer of 2009, and it is therefore appropriate to base this overview on the way the main EPGs stood towards the end of 2009. The tables in Section 6.1 (Appendix A) below give summary details of the three EPGs under consideration as they appeared in November 2009. To give an idea of what a move from the top to the bottom of the Entertainment section means in practice, we have also included more detailed illustrations of the Entertainment sections of the three EPGs under consideration.

Not counting regional variations, there were 577 channels listed on the Sky EPG, 226 on the Virgin Media EPG and 77 on the Freeview EPG. The channels on all three EPGs are grouped by genre and ranked in ascending order by EPG number. While the respective channel rankings and genre groupings are

[4] It should be noted that the Freeview EPG includes channels only available through the Top Up TV pay service, and should therefore, strictly speaking, be referred to as the DTT (Digital Terrestrial Television) EPG. On the other hand, Top Up TV has remained a very marginal player in the DTT subscription market, and we have therefore stuck with the commonly used convention of referring to it as the Freeview EPG.

generally different, what all three EPGs have in common is that they always start off with the Entertainment channels headed by the 5 terrestrials (BBC1, BBC2, ITV1, CH4 and Five). On the Sky and Virgin Media EPGs the different channels can be accessed through the All Channels option on the TV Guide page, which brings up a list of all the channels ranked in ascending order by EPG number, at 10 channels per EPG page for Sky and 7 channels per EPG page for Virgin Media. Alternatively, they can also be accessed through one of the channel genre options, which brings up an EPG number ranked list of only those channels within the selected genre section.[5] Due to bandwidth restrictions, no channel genre filtering option is available for the Freeview EPG, though this is not a particular problem due to the much smaller number of available channels. It is also worth noting that, although channels are always ranked in ascending order by EPG channel number, the number of channels listed per EPG page will depend on the Freeview reception equipment used. Most basic Freeview set top box receivers list 5 channels per EPG page, but televisions with built in Freeview receivers may list up to 12 channels per page.

Moving on to how viewing is distributed across the three EPGs under consideration, of the 77 channels on the Freeview EPG in November 2009, 38 (49%) were measured by BARB, but these accounted for 97% of viewing on the Freeview (DTT) platform in November 2009, with the BARB measured channels in the Entertainment section of the Freeview EPG (including the 5 Terrestrials) accounting for 91.5% of viewing. On their own the 5 Terrestrial channels still accounted for 63% of viewing on Freeview.

Of the 226 channels on the Virgin Media EPG in November 2009, 162 (72%) were measured by BARB, but these accounted for 94.4% of viewing on the Cable platform in November 2009, with the BARB measured channels in the Entertainment section of the Virgin Media EPG (including the 5 Terrestrials) accounting for 71.4% of viewing. On their own the 5 Terrestrial channels still accounted for 46% of viewing on Cable.

Of the 577 channels on the Sky EPG in November 2009, 239 (41%) were measured by BARB, but these accounted for 95.7% of viewing on the Digital Satellite (DSAT) platform in November 2009, with the BARB measured channels in the Entertainment section of the Sky EPG (including the 5 Terrestrials) accounting for 69% of viewing. On their own, the 5 Terrestrial channels still accounted for 44.7% of viewing on DSAT. Further details can be found in Section 6.1 (Appendix A) below.

[5] Another potential access point is through a 'favourites' channel list that users have the option of setting up themselves.

3.2. Correlation Analysis

To get a better overview of how EPG positioning and Share of viewing are likely to relate to each other, it is useful to create scatter plots of channel audience Share against channel rank for each of the three EPGs under consideration. This has been done in the figures below, which are colour coded to highlight the different channel genre groups,[6] and exclude the 5 Terrestrial channels as their high viewing levels (most notably for BBC1 and ITV1) would compress the scale of the charts to the point where the smaller channels would be difficult to see.

As can been seen in the Sky EPG scatter chart (Figure 1) the beginning of each genre section is generally marked by a peak in performance, followed by a decline and then a surge at the start of the next genre section. This suggests that viewers do generally select a genre option first before browsing through the Sky EPG, and that channels at the top of each genre section do on average tend to perform better than those further down. A very similar (albeit somewhat less pronounced) pattern emerges from the Virgin Media EPG scatter chart (Figure 2). Moving onto the Freeview EPG scatter graph (Figure 3), this also reveals some evidence of genre based navigation, despite the fact that there is no direct genre filtering option for the Freeview EPG, with viewers (who do not access a channel directly by typing in its EPG number) having to scroll down the entire list to reach the lower channel groupings. Nevertheless, Cbeebies and BBC News do stand out as strong performers among the lower ranked channels and genres, suggesting a strong appointment-to-view element to their performances, with viewers seeking them out directly.

In fact, a channel genre based correlation analysis confirms that within a significant majority of the main genre sections of the Sky, Virgin Media and Freeview EPGs, there is a negative correlation between a channel's performance and its EPG positioning (as evidenced by the downward sloping genre-based trend lines), whereby channels further down a given genre section generally do worse than those nearer the top.[7] It should also be noted that this negative correlation remains significant even when the most obvious performance outliers (not just the 5 terrestrial channels, but also some of the top performing digital channels) are excluded from the analysis.[8]

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[6] Genre sections with fewer than 3 BARB measured channels have not been included in our scatter graph.

[7] A notable exception is the Virgin Media EPG's Movies section, where this trend is clearly reversed. Closer inspection, however, reveals that this counterintuitive result is generated by the fact that the first 11 of the 17 BARB measured channels in the Movies section of the Virgin Media EPG are the Sky Film channels, which aren't available as part of any of the standard Virgin Media TV packages and require an additional subscription.

[8] As many of the top performing channels tend to be near the top of a given EPG genre section (particularly in the case of the Entertainment channels) this is likely to generate an inherent bias towards negative correlation between EPG positioning and

However, apart from establishing this broad fact, there is a limit to what a correlation analysis between EPG positioning and channel performance can tell us about the likely underlying causalities involved. For example, it could be plausibly argued that, as a general rule, channels further down a given EPG genre section tend to have mediocre low budget schedules, and that this, rather than their positioning, explains their poor performance.

On the other hand, this fails to explain why a channel like ITV2+1 at number 33 on the Freeview EPG in November 2009, had an audience only 18% the size of ITV2's at number 6 (25 channel ranks higher up, accounting for numbering gaps), while E4+1 at number 29 had an audience 55% the size of E4's, just above it, at number 28. Indeed, an equally plausible hypothesis is that, through the capture of EPG browsing viewers, a channel further down an EPG is likely to perform significantly worse than a similar channel (in terms of content and brand strength) that is located much further up.

The crucial point, of course, is the ability to compare like with like, and so the best starting point is to study actual examples where channels have changed EPG positions, to see whether or not it is possible to establish statistically significant causal links between EPG positioning changes and performance. Below we outline our statistical methodology for conducting such an analysis.

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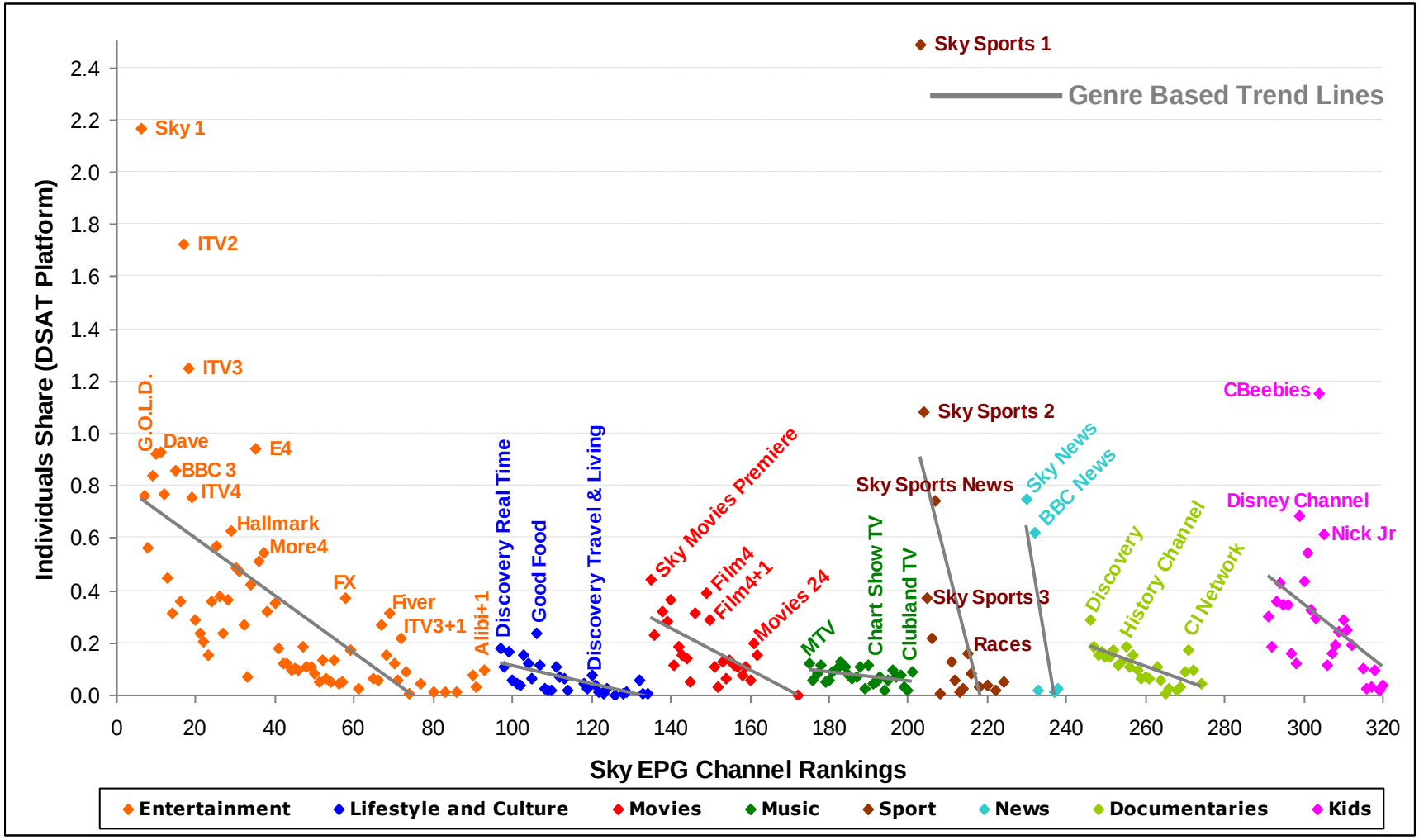
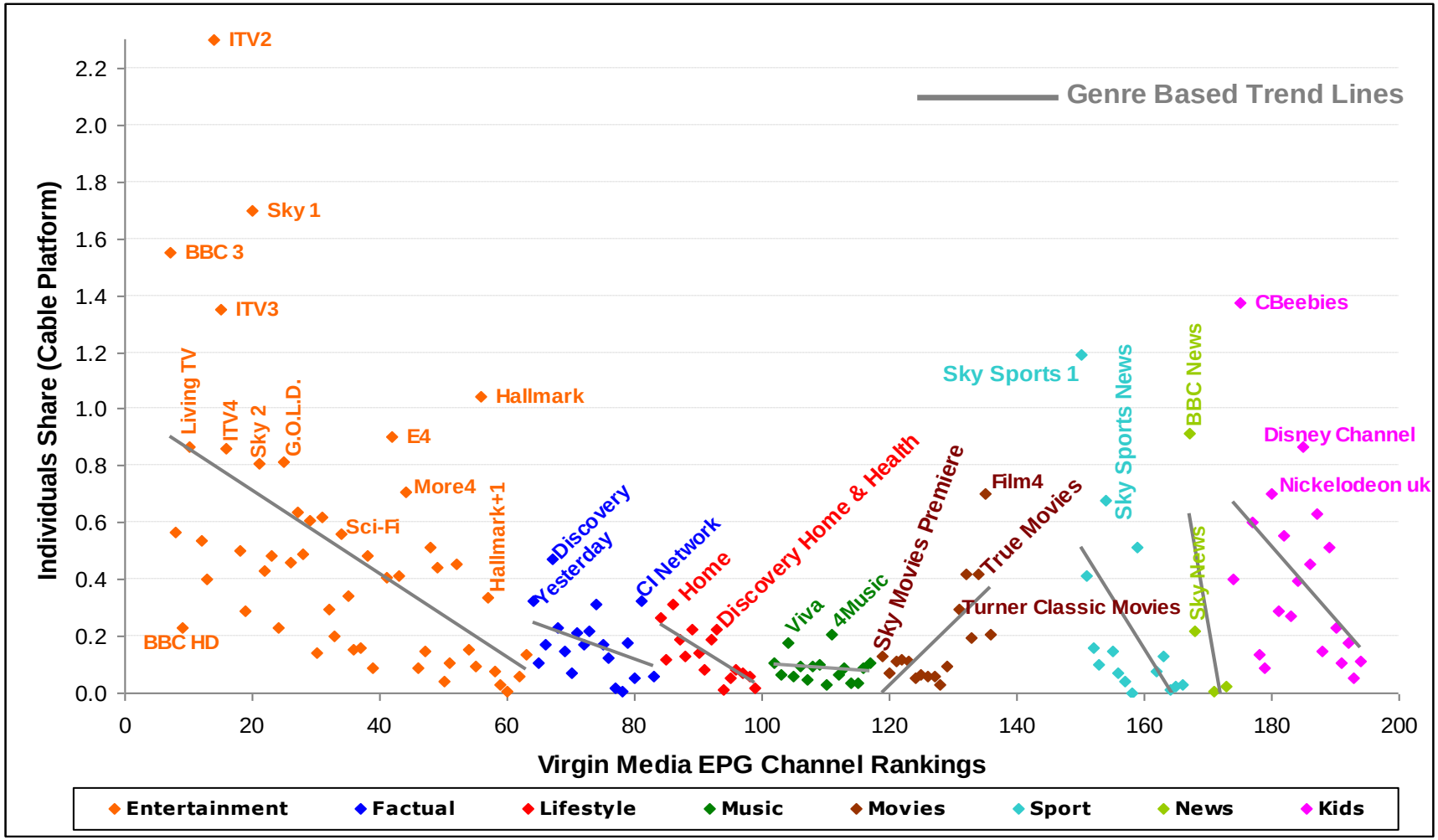
performance. To avoid this outlier performance bias, it is therefore necessary to exclude any channels averaging more than a 1% Share of viewing on the Cable and Satellite platforms, and more than a 2% Share of viewing on Freeview.

Figure 1: Sky EPG, Audience Share vs. Channel Rank for Main Genres (November 2009)



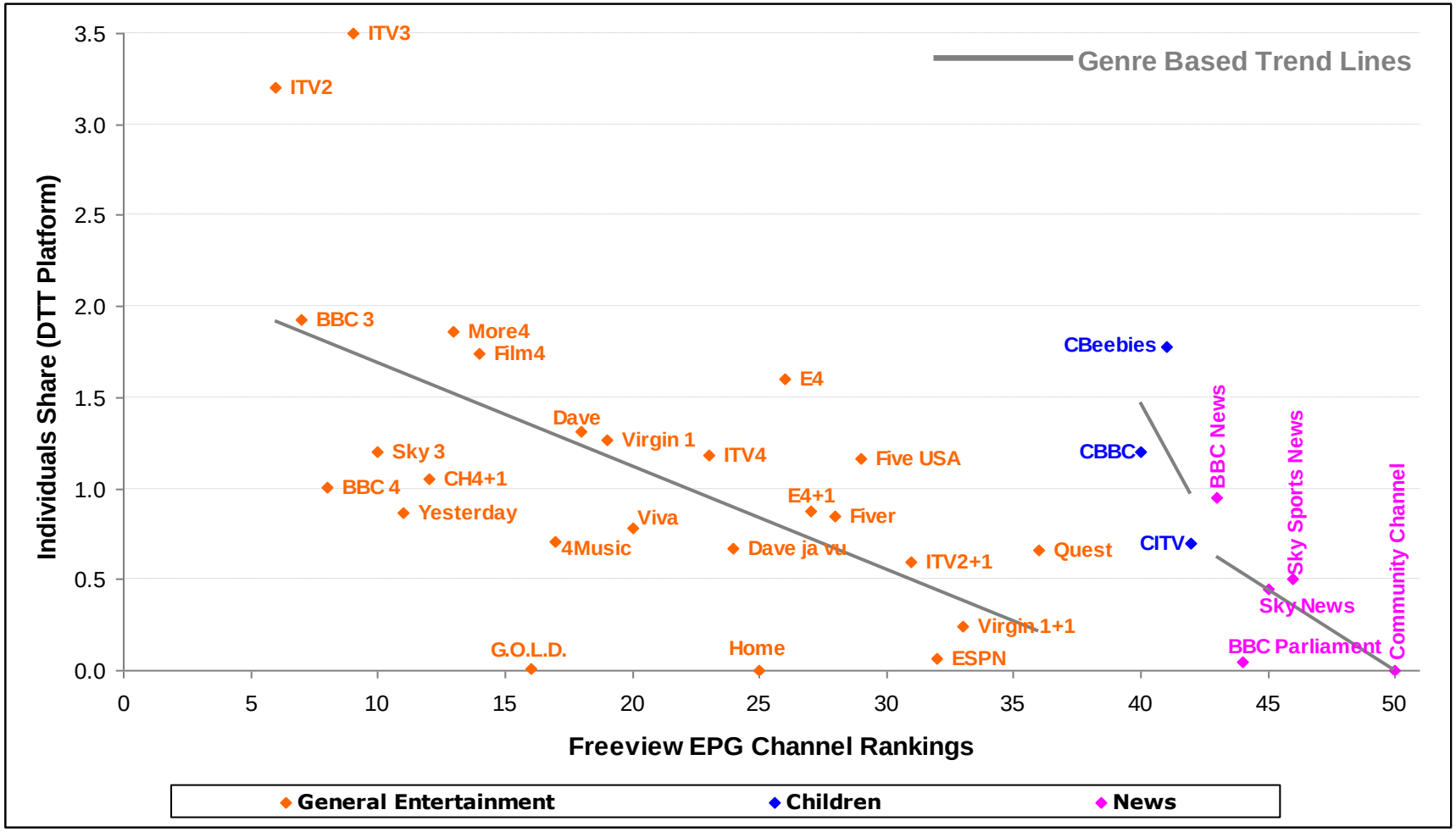
Source: Attentional/BARB

Figure 2: Virgin Media EPG, Audience Share vs. Channel Rank for Main Genres (November 2009)



Source: Attentional/BARB

Figure 3: Freeview EPG, Audience Share vs. Channel Rank for Main Genres (November 2009)



Source: Attentional/BARB

4. Assessing the Evidence for the Viewing Impact of EPG Prominence

In this section we review the evidence from actual EPG movements and find that 28 of the 33 examples looked at (85%) support an argument that EPG positioning affects audience performance, 4 examples are inconclusive and 1 supports an argument that EPG positioning does not affect audience performance. On balance, the evidence therefore strongly supports the view that EPG positioning is likely to have a significant impact on a channel's performance. Based on this evidence, we consider that if a major digital entertainment channel suffered a significant loss of EPG prominence, this would be associated with a 10-20% drop in audience Share on the Freeview platform and a 20-40% fall in audience Share on the Sky and Virgin Media platforms.

4.1. Statistical Methodology for Isolating EPG Change Viewing Impacts

It must be acknowledged from the outset that, due to the large number of confounding and interrelated factors that contribute to a channel's overall performance, determining the impact of EPG positioning on channel performance is a difficult task, particularly when this relates to the impact of page one prominence. While most would agree that EPG positioning is likely to have a significant influence on a channel's performance, this is also going to be strongly influenced by a channel's brand image, the quality, uniqueness and mass appeal of its programming and, not least, whether it is free to air or only available as part of a basic or higher-value channel package on the distributing platform. There are certainly many examples where channels further down a given EPG do better than those nearer the top. It is also the case that, while there are numerous examples of past channel reshuffles for analysis, these are almost invariably for channels that do not start off with the advantages of page one prominence, nor do any have the type of unique mass appeal content or brand strength of a channel like ITV1. Our analysis can therefore only seek to minimize the influence of these confounding factors, not remove them completely.

That being said, Attentional has extensive experience in conducting EPG change impact modelling. Our approach is based on the study of actual examples where channels have changed EPG position, to see whether or not it is possible to establish statistically significant causal links between positioning changes and channel performance.

The first step is to compare the daily channel Shares (Individuals Share for the broadcasting platform under consideration) in the six weeks before and after a given EPG change has taken place. As we are comparing the same channel before and after a change, this eliminates some of the confounding influences. The choice of a six-week period either side of an EPG change is a compromise between ensuring that we have enough data points to establish that any observed differences are significant and persistent, whilst minimising the possibility of other structural factors (like significant scheduling changes or the launch of a competing channel or programme, not to mention the rapid growth in multichannel penetration) coming into play. When dealing with channel groups, however, we have extended this to 3-months either side of the EPG change, as channel groups tend to be less susceptible to underlying confounding influences than individual channels.

As daily channel Shares can be highly variable, any observed differences between the pre- and post- EPG change averages also need to be tested for statistical significance to rule out the possibility that these may simply be a product of the underlying variances in the data. We do this using an independent sample t-test.

While a t-test can tell us if there is a statistically significant difference between the average of the daily channel Shares six weeks before, versus those six weeks after, an EPG change, it is also important to consider the possibility that this may be the result of an underlying time-trend in the channel Share time-series rather than a step change at the time of the EPG change. This would be the case, for example, if there were a consistent rise or fall in a given channel's daily viewing Share over the 12-week period in question. Nor does the presence of a significant time-trend necessarily rule out the existence of a step change (i.e. structural break) at the time of an EPG change. Indeed, if a time-trend is moving in the opposite direction to a step change (e.g. an upward trend with a downward step change) it is possible that an independent sample t-test would fail to detect any significant difference, as the pre- and post-EPG change channel Share averages could potentially be very similar. As a result, we also conduct a regression based structural break test that combines a time-trend with a dummy variable to test for any significant step changes at the time of a given EPG change. This is designed to account for any underlying time-trends, where present.

Where a channel goes out on more than one platform (say Sky and Virgin Media, for example) and is subject to an EPG change on only one,[9] we also analyse the channel's performance on the platform where it hasn't moved within the EPG (using the same techniques outlined above), as this provides an additional reference benchmark for establishing the viewing impact of the EPG change on the platform where the EPG reshuffle has taken place. Where no such reference benchmark exists (for example where a channel is only available on a single platform), but the channel under consideration is timeshifted, then we generally use the primary channel (provided it hasn't

[9] Or where any EPG changes on the benchmark platform are small enough to be negligible (for example a move of only 1 or 2 channels ranks).

been moved as well) as the reference benchmark.[10] Our expertise as UK television market analysts also allows us to identify significant confounding factors, the impact of which may not always be apparent in a channel's performance time-series, but whose influence would still need to be taken into account in our interpretation of the results.

Our analytical approach is therefore designed to account for as many confounding factors as possible, with the aim of isolating the pure viewing impact of an EPG change, and while it isn't always possible to account for all the confounding influences, we do believe that our approach generally provides strong evidence based estimates.

In the next section we outline our approach to interpreting, categorising and presenting our results.

4.2. Interpreting & Categorising our Results

Interpreting and categorising the results of our analysis of actual EPG reshuffles is not always straightforward. As already noted in the Introduction, we did not select our EPG change examples knowing that they would provide unequivocal support for the thesis that EPG positioning has a significant impact on channel performance.[11] Indeed, a number of the examples we have analysed in this report only provide weak support for this thesis, while for others it is impossible to isolate the impact of the EPG change due to a number of confounding factors. It is best to illustrate the difficulties involved with some actual examples.

The most clear cut result in support of an EPG change viewing impact is where there is a statistically significant and logically correct Share change (i.e. a move up the EPG leads to a rise in Share while a move down leads to a fall) for the channel that has moved, while the reference benchmark remains statistically stable in the sense that any change that does occur can be reasonably attributed to the underlying statistical variances in the datasets. The most clear cut result against an EPG change impact is where there is no statistically significant Share change for the channel that has moved while the reference benchmark also remains statistically stable.

Unfortunately only a small minority of the reshuffles we have analysed fall into such clear cut categories. A good example to illustrate this point is that of ITV2+1 moving up 42 channel ranks, from near the bottom into the upper

[10] We were able to conduct a reference benchmark analysis for 32 out of the 33 EPG reshuffles that were investigated as part of this report.

[11] Our main criteria for selecting an EPG change example for further analysis was that we could validate and (as far as possible) quantify the EPG move taking place, and that, even where significant confounding influences were likely to come into play, there was still a reasonable chance for us to be able to identify and isolate an EPG change viewing impact if present.

third of the Entertainment section of the Sky EPG. This coincided with a statistically significant rise in its Share of 69.5%. As it did not move directly below ITV2 (remaining 13 channel ranks further down the EPG), it is also unlikely to have benefited significantly from any additional gains associated with a consecutive primary/time-shifted channel pairing.[12] This therefore seems like a very clear cut example in support of an EPG change viewing impact, except for the fact that the primary reference benchmark (ITV2+1 on Freeview) also shows a statistically significant 23.1% rise in its Share, despite remaining in exactly the same position on the Freeview EPG. It is true, of course, that (in percentage terms) this rise is still only a third of the 69.5% increase in ITV2+1's Share on Sky. Nevertheless, should this mean that we class this as a more uncertain example, rather than one where the evidence is very clear cut? The issue rests on what is likely to have caused the increase in ITV2+1's Share on Freeview, and if this is something that would have affected ITV2+1 on Sky in the same way, as this would allow us to deduct it from the percentage Share increase on Sky and thus isolate the pure viewing impact of the reshuffle. In this case we know that the EPG reshuffle also happened to be very close to the time that ITV2 and ITV2+1 started broadcasting 24 hours a day on all platforms, with GMTV2 transferring to ITV4. It seems highly likely that this is what caused the increase in ITV2+1's Share on Freeview, and we are therefore in a credible position to isolate the pure EPG change viewing impact for ITV2+1 on Sky (i.e. 69.5% - 23.1% = 46.4%), making this a robust example in support of an EPG change viewing impact.

Even more complex is the case of DMax which moved up 10 channel ranks in the Entertainment section of the Sky EPG, but did not show a statistically significant uplift in its performance following the move. On the basis of this evidence alone we would have to say that this is not an example that supports the thesis that EPG positioning has a significant viewing impact. However, this changes when we look at the reference benchmark (i.e. DMax on Virgin Media) which wasn't subject to an EPG move but suffered a statistically significant 40% drop in performance over the period in question. On the basis of this additional evidence it could be argued quite plausibly that DMax's move up the EPG on Sky counteracted the underlying (most likely schedule based) downward pressure on its performance, so that it was able to avoid the large, statistically significant drop in performance suffered by DMax on Virgin Media. However, as the burden of proof rests with the reference benchmark (i.e. we cannot observe a direct impact on the reshuffled channel, but have to infer this from what has happened to the reference benchmark), we cannot consider this to be the clearest of examples. Nevertheless, the balance of the evidence does provide significant support for the thesis that EPG prominence has an appreciable viewing impact.

[12] The likely benefits of such a pairing for the timeshifted channel, and how we account for this in cases where a timeshifted channel does move directly below its primary counterpart, will be discussed further in Section 4.3 below.

Depending on the likely number of confounding factors involved, it can become even more difficult to interpret the evidence, both for and against a likely EPG change-induced viewing impact, let alone quantifying and isolating such an impact where present.

The most logical basis for categorising our results is therefore how credibly we were able to isolate the likely EPG change viewing impact of a given reshuffle and, with this in mind, we have grouped our results into 5 distinct categories:

- EPG change examples where the evidence in support of a viewing impact is **highly significant**, covering all those examples where we were able to isolate and quantify the EPG change viewing impacts with a high degree of certainty, and this includes a number of examples, like that of ITV2+1 outlined above, where the reference benchmark was also subject to a significant, but (crucially) fully accountable, impact;
- EPG change examples where the evidence in support of a viewing impact is **significant**, covering all those examples where our ability to isolate and quantify the EPG change viewing impacts was somewhat less certain (as was the case with the aforementioned DMax example), but that, on balance, still provided compelling evidence in favour of an EPG change viewing impact.
- EPG change examples where the evidence in support of a viewing impact is **weakly significant**, covering all those examples where the balance of the evidence was at least marginally in favour of an EPG change viewing impact, but it proved impossible to isolate and quantify this with any degree of certainty;
- EPG change examples where the evidence, both for and against a viewing impact, is **inconclusive**, covering all those examples where a number of major confounding influences made it impossible to find reliable evidence either for or against an EPG change viewing impact;
- EPG change examples where the evidence **does not support a viewing impact**, covering those examples where, in the absence of any clear confounding influences, major moves up or down an EPG did not result in any appreciable viewing impacts.

A summary of the headline results of our analysis for each of the 5 aforementioned categories is given in Table 1 below, followed by more detailed discussions in the subsequent sections.

Table 1: Headline Results Summary of the EPG Change Viewing Impact Analysis

Evidence in Support of an EPG Change Viewing Impact	Type of EPG Move	No of Examples	Final Viewing Impact Attributable to EPG Change
Highly Significant	Loss of Prominence	11	Performance Losses of between 20% and 46%
	Gain in Prominence	7	Performance Gains of between 22% and 119%
Significant	Loss of Prominence	1	Performance Loss of around 36%
	Gain in Prominence	2	Performance Gains of between 28% and 114%
Weakly Significant	Loss of Prominence	2	For all these examples the balance of the evidence was at least marginally in favour of an EPG change viewing impact, but it wasn't possible to isolate and quantify this with any degree of certainty
	Gain in Prominence	5	
Inconclusive	Loss of Prominence	1	For all these examples there were a number of major confounding influences that made it impossible to find reliable evidence either for or against an EPG viewing impact
	Gain in Prominence	3	
None	Gain in Prominence	1	The evidence suggests that this EPG change did not result in a significant viewing impact

Source: Attentional/BARB

4.3. EPG Change Examples where the Evidence in Support of a Viewing Impact is Highly Significant

Of the 33 EPG reshuffle examples that we analysed, 18 (55%) provided highly significant support for the thesis that EPG positioning has an impact on channel performance. Of these 18 examples, 14 were from the Sky EPG, and a further 2 each came from the Virgin Media and Freeview EPGs. A summary overview of the Highly Significant results (in chronological order by reshuffle date) is given in Section 6.4 (Confidential Appendix D) below, and full analytical output tables and charts can be found in Section 6.6 (Confidential Appendix F).

In the first example, the leading lifestyle channels were moved down 42 channel ranks on the Sky EPG, and this provided some very clear cut results in support of an EPG change induced viewing impact. There was a statistically significant (intuitively correct) downward step change in the performance of this group at the time of the reshuffle (no underlying time trends were detected), with a highly statistically stable reference benchmark, suggesting that the lifestyle channels lost 0.574 Share points (down 19.5%) as a result of losing their relatively prominent positions in the upper half of the Entertainment section.

The next two reshuffle examples cover the Virgin Media EPG, and are interesting because Discovery's factual and lifestyle channels did not lose out significantly in terms of their EPG channel rankings, but had a barrier of strongly competing channels placed ahead of them in the form of the newly consolidated UKTV factual and lifestyle channel blocks. The expectation is that such a move could potentially impact negatively on the performance of the Discovery channels, with the UKTV channels soaking up passing viewers before they can reach the Discovery channels further down. This is indeed exactly what happened, with Discovery's factual and lifestyle channel groups losing 0.312 and 0.211 Share points (down 15.6% and 23.8%) respectively. The robustness of these results is also supported by the reference benchmarks,[13] and no underlying performance time trends were detected at the time of the reshuffles.

The 4th example involved More4+1 moving up 26 channel ranks (from the lower to the top half of the Entertainment section) to just below More4 on the Sky EPG. The impact on the performance of More4+1 was dramatic, with an increase of 0.109 Share points (up 113.4%), and the robustness of this result is confirmed by the stability of the reference benchmark and the

[13] In fact, while the reference benchmark for Discovery's lifestyle channels was very stable, that for the factual channels showed a significant rise in performance at the time of the reshuffle (up 8.6%), suggesting that the negative impact of the reshuffle on Discovery's lifestyle channels could have been as high as 24%. However, erring on the side of caution, we have gone with the directly observable increase of 15.6% in the final analysis.

absence of any underlying performance time trends. An important confounding factor to consider, however, is the possibility that More4+1 may have derived an additional benefit as a result of having moved directly below its primary counterpart. There is certainly a significant body of evidence that supports this view, though the precise magnitude of this benefit is more difficult to quantify.[14] Weighing up all the available evidence, however, suggests that this is likely to have resulted in an additional 20% boost to More4+1's performance.[15] This therefore puts More4+1's gain from the EPG move alone at 0.091 Share points (up 93.4%).

The 5th example involved E4 moving down 14 channel ranks on the Freeview EPG, putting it just ahead of E4+1. Following this move E4 lost 0.733 Share points (a drop of 25%). This proved to be statistically significant on the t-test, but our structural break model also revealed an underlying downward time-trend, though still with a statistically significant downward step change (albeit somewhat more moderate at 0.384 Share points, a 13% drop) at the time of the reshuffle. The reference benchmarks, however, also showed a statistically significant drop in the 6 weeks following the reshuffle, though this could not be associated with a step change at the time of the reshuffle, but only as an underlying time trend over the entire 12-week period under consideration.

The fact that E4 exhibits an underlying downward time-trend on all three platforms suggests that there is a common confounding factor at play. But as

[14] The idea is that a primary channel will advertise the content of its timeshifted counterpart to browsing viewers, but this is only really effective if the timeshifted channel is placed directly below its primary. The most clear cut example we have to support this view is when E4 moved down the Entertainment section of the Freeview EPG into the slot directly ahead of E4+1. Despite not moving up or down the EPG itself, there was still a 22.5% boost to E4+1's performance. On the other hand, there are other examples, like Discovery Home & Heath first moving away from and then back next to its timeshifted counterpart, which are much more ambivalent, with what evidence there is suggesting that the impact could be much lower than that suggested by the E4/E4+1 example. Another approach is to compare examples where timeshifted channels have moved next to or away from their primary counterparts, with examples where a timeshifted channel reshuffle does not involve it being split from, or moved next to, its primary counterpart. This evidence does, on balance, also support the view that timeshifted channels benefit by being placed directly below their primaries, though it is difficult to quantify the exact size of this benefit. Also see: http://www.ofcom.org.uk/consult/condocs/psb2_phase2/responses/DiscoveryNetworksUKAnnex2.pdf, for further evidenced in support of this view. The 22.5% impact from the E4/E4+1 example therefore remains the best source for the likely magnitude of the viewing impact of a primary/timeshifted channel pairing, and, in view of some of the more ambivalent evidence mentioned above, we have rounded this down to 20% for our EPG change impact analysis.

[15] By the same token, if this move involved a timeshifted channel being split from its primary counterpart by moving down the EPG, then this would most probably result in a further 20% drop in the performance of the timeshifted channel on top of that attributable to the EPG move alone.

E4 on Freeview also exhibits an additional step-change at the time of the reshuffle, our reduced EPG change impact estimate of -13.2% will already have taken this confounding downward pressure into account. Nevertheless, the strength of the non EPG change related downward pressure warrants closer scrutiny, and the most likely culprit is the fact that Big Brother 2007 ended on 01-Sep, only 12 days after the reshuffle. Extending our structural break model to test for this strongly supports this view, and also suggests that the negative viewing impact resulting from the EPG change on Freeview is likely to have been as high as -15.5% (a loss of 0.456 Share points).

Another potential concern with this reshuffle scenario is that it also coincided with the launch of CH4+1. However, as Film4+1 went off air on the Freeview platform at the same time, this would have largely compensated for the new channel's presence. Indeed, in the 6 weeks before it went off air, Film4+1 averaged 0.8 Share points on Freeview, while in the 6 weeks after it's launch CH4+1 did not do that much better with 1 Share point, suggesting its overall contribution to audience fragmentation on the Freeview platform is likely to have been marginal at best.

It is also important to address the fact that E4 moved next to E4+1, which gained substantially as a result of being next to its primary counterpart, and this raises the issue of cannibalization. However, judging from other relevant examples, the evidence for cannibalization under these circumstances is ambiguous. For example, when More4+1 moved next to More 4 on the Sky EPG, More4's audience remained stable (in fact, it went up, but not enough to be statistically significant) despite More4+1 making substantial gains, as noted above. It must also be remembered that moving next to an existing +1 channel is not the same as having a completely new timeshifted channel launch next to its primary on the EPG.[16]

The 6th example shows how E4+1 benefited from having E4 move to the position just ahead of it on the Freeview EPG, gaining 0.174 Share points (up 22.5%) as a result.

In the 7th EPG reshuffle example, Virgin1/Virgin1+1's 29-place rise, [17] from page 5 to the bottom of page 2, coincided with a very substantial boost in its performance, with its viewing share rising from 0.266 to 0.582 (a gain of 0.316 share points, equivalent to 119% of its pre-change share). No underlying performance time trends were detected. A potential caveat, however, is that Virgin1's well publicised EPG change also coincided with the equally well publicised launch of the *Sarah Connor Chronicles*, which has been one of Virgin1's highest rating shows to date. On the other hand, the statistical stability of both reference benchmarks (i.e. Virgin1 on Virgin Media

[16] It is also worth noting that even if all of E4+1's absolute Share gain had come from E4 (an extremely unlikely assumption), this would still have put the negative impact on E4 from losing EPG prominence at around 10%.

[17] As Vigin1 and Virgin1+1 have consecutive EPG places and moved up the Sky EPG together, they have been treated as a single channel for the purpose of this impact assessment.

and Virgin1 on Sky) strongly suggests that the overall impact of the *Sarah Connor Chronicles* is likely to have been small.

The 8th example relates to Bravo/Bravo+1 being moved down 2 channel ranks and leapfrogged by Virgin1/Virgin1+1. As with the earlier leapfrogging example on Virgin Media, this had a significant negative impact, with Bravo/Bravo+1 losing 0.093 Share points (down 18.4%). This result is supported by the statistical stability of the reference benchmark, and there were no underlying performance time trends at the time of the reshuffle.

The 9th example, for ITV2+1, has already been discussed at length in Section 4.2 above.

The 10th example involved Men & Motors being moved down 5 pages (42 channel ranks) from the bottom of page 3 to the top of page 8 of the Entertainment section of the Sky EPG. All the evidence strongly supports the view that this resulted in it losing 0.046 Share points (a 35.1% decline).

The 11th example involved DMax+1 moving up 47 channel ranks to just underneath DMax in the Entertainment section of the Sky EPG. This coincided with a 0.039 Share point rise (up 50.1%) in its performance. There was, however, also a significant underlying performance time trend, putting considerable downward pressure on DMax+1's performance at the time of the reshuffle, and this was fully corroborated by the reference benchmark. Taking this into account puts the boost in DMax+1's performance at a much more substantial 0.078 Share points (up 100%). This gain, however, is likely to include the additional benefit of DMax+1 having moved just below DMax on the Sky EPG, and as noted earlier, this is likely to have accounted for around 20% of DMax+1's performance boost, putting the final performance gain attributable to DMax+1's move up the EPG at 0.062 Share points (up 80%).

The 12th example involved Animal Planet+1 being split from its primary counterpart and moved down 10 channel ranks in the Documentaries section of the Sky EPG. This coincided with a 0.069 Share point drop in its performance (down 47.9%), and there was no underlying performance time trend or instability in the reference benchmarks at the time of the reshuffle. Factoring in the impact of being split from its primary (which is likely to have resulted in an additional 20% drop in its performance) suggests that, overall, Animal Planet+1 lost 0.040 Share points (down 27.9 %) as a result of the EPG move alone.

The 13th example was for Discovery Real Time+1 moving up 13 channel ranks in the Lifestyle & Culture section of the Sky EPG to a position just underneath Discovery Real Time. This coincided with a 0.041 Share point boost to its performance (up 62.1%), and there was no underlying performance time trend or instability in the reference benchmarks at the time of the reshuffle. Factoring in the impact of being moved next to its primary (which is likely to have resulted in an additional 20% boost to its performance) suggests that, overall, Discovery Real Time+1 gained 0.028 Share points (up 42.1 %) as a result of the EPG move alone.

The 14th example involved the Crime & Investigation Network (C&I) being moved down 14 channel ranks in the Documentaries section of the Sky EPG, from a relatively prominent position near the top of the second page, to the bottom of the Documentaries section. This resulted in a statistically significant drop of 0.060 Share points (down 15%) in its performance. However, the presence of a significant upward performance time trend at the time of the reshuffle is likely to have masked the full extent of the EPG change induced downturn, and this is also corroborated by the reference benchmark. Using our structural break model to account for this underlying performance time trend suggests that the true impact of the loss in EPG prominence is likely to have resulted in a 0.15 Share point drop (down 36.8%) in C&I's performance.

The 15th example is noteworthy as it is the only one we have for a UK channel losing its slot on the first page of the Entertainment section for any of the three EPGs under consideration. It involved G.O.L.D+1 moving down 22 channel ranks from the bottom of page 1 to the top of page 4 on the Entertainment section of the Sky EPG. As one might expect, G.O.L.D+1 was down by 0.343 Share points (a 55% decline) following this move. There was, however, also a significant underlying downward time-trend, as confirmed by the reference benchmark, which is likely to have exacerbated this decline. The most likely explanation is that this was caused by the launch of Watch, and taking this into account using the structural break model suggests that the drop caused by the EPG reshuffle alone was a more moderate 0.258 Share point (down 41%). We must also account for the fact that, as part of this move, G.O.L.D+1 was split from its primary channel. The best evidence we have suggests that this is likely to result in a 20% drop in viewing, putting the negative impact of the EPG move alone at 0.13 Share points (down 21%).

The 16th example involved a very significant loss of prominence for Alibi+1, with a move from the top of page 4 to the bottom of page 10 (down 54 channel ranks) of the Entertainment section of the Sky EPG. This coincided with it losing 0.258 Share points (down 67%). As one would expect with such a large loss, this proved to be statistically significant on the t-test, and the structural break test revealed no significant underlying performance time trends. The primary reference benchmark (i.e. Alibi+1 on Virgin Media) was also statistically stable, making this a very clear cut result. The only other factor to consider is that Alibi+1 was also split from its primary channel as a result of this move. The best evidence we have suggests that this is likely to result in a 20% drop in viewing, putting the negative impact of the EPG move alone at 0.18 Share points (down 46.5%).

The 17th example is for Hallmark+1, which moved up 44 channel ranks from the last to the fifth page of the Entertainment section of the Sky EPG. This coincided with a doubling of Hallmark+1's Share of viewing, a gain of 0.111 Share points (up 101%). There was no underlying performance time trend or instability in the reference benchmarks at the time of the reshuffle. It is also noteworthy that in its new position, Hallmark+1 is still placed well below

Hallmark on the Sky EPG, making any direct benefit to Hallmark+1 from a closer association with its primary channel highly unlikely.

The final example is for Sci-Fi+1 being moved down 62 channel ranks from its position just below Sci-Fi in the Entertainment section of the Sky EPG. As one would expect, the impact of this 62 channel rank move down the EPG, coupled with the additional negative influence of being split from its primary channel, had a devastating impact on Sci-Fi+1's performance. The overall result was a loss of over half its audience (a loss of 0.103 Share points, down 52%). Of the two available reference benchmarks Sci-Fi on Sky showed an underlying upward performance time trend, suggesting that the EPG change induced viewing impact may have been even higher. On the other hand, such a trend was not apparent in the other reference benchmark (Sci-Fi on Virgin Media) nor indeed for Sci-Fi+1 on Sky itself, making it best to err on the side of caution. Factoring in the additional impact of the split from its primary counterpart would therefore suggest that Sci-Fi+1 lost 0.064 Share points (down 32%) as a result of the EPG move alone

4.4. EPG Change Examples where the Evidence in Support of a Viewing Impact is Significant

Of the 33 EPG reshuffle examples that we analysed, 3 (9%) provided significant support for the thesis that EPG positioning has an impact on channel performance. All 3 examples in this category were from the Sky EPG. A summary overview of the Significant results (in chronological order by reshuffle date) is given in Section 6.4 (Confidential Appendix D) below, and full analytical output tables and charts can be found in Section 6.7 (Confidential Appendix G).

The first example relates to Bravo2 moving down 28 channel ranks in the Entertainment section of the Sky EPG, a move that coincided with a 0.111 Share point drop (down 51%) in its performance, manifesting itself as a statistically significant step change at the time of the reshuffle without any significant underlying performance time trends. There was, however, some associated instability in the reference benchmark which was also down by around 15%, though not in the form of a statistically significant step change but as the result of a significant underlying time trend. It wasn't clear what caused this trend in the reference benchmark (Bravo2 on Virgin Media), nor why a similar time trend wasn't present in the performance time series of Bravo2 on Sky, and this is ultimately why this result was classed as significant rather than highly significant. Nevertheless, as the time trend induced impact on the Virgin Media reference benchmark was proportionally much smaller than the step change induced impact on Sky, this remains a strong example in support of the viewing impact of EPG prominence. Indeed, roughly factoring in the instability in the reference by reducing the observed

impact on Bravo2 on Sky by 15%, still results in a 36% performance drop as a result of Bravo2's loss of EPG prominence.

The second example relates to DMax and has already been discussed at length in Section 4.2 above.

The final example is for Style Network moving from the middle of the 4th (and last) page of the Lifestyle & Culture section of the Sky EPG, to the middle of the second page (a rise of 20 channel ranks). This coincided with a rather dramatic 0.013 Share points rise in its performance (up 114%). This proved to be statistically significant on the t-test, and the structural break model showed no evidence of an underlying performance time-trend, implying that the bulk of Style Network's performance gain can be attributed to this reshuffle. The only uncertainty is that no reference benchmark was available to provide an additional validation for this result, which is why it has been classed as significant rather than highly significant. Nevertheless, this is still a compelling example in favour of the viewing impact of EPG prominence, given the relative size of the gain and the fact that it coincides so clearly with the date of the reshuffle.

4.5. EPG Change Examples where the Evidence in Support of a Viewing Impact is Weakly Significant

Of the 33 EPG reshuffle examples that we analysed, 7 (21%) provided weakly significant support for the thesis that EPG positioning has an impact on channel performance. Of these 7 examples, 2 were from the Virgin Media EPG, and the remaining 5 came from the Sky EPG. A summary overview of the Weakly Significant results (in chronological order by reshuffle date) is given in Section 6.4 (Confidential Appendix D) below, and full analytical output tables and charts can be found in Section 6.8 (Confidential Appendix H) below.

The first two examples relate to the merging of the NTL and Telewest EPGs in anticipation of their re-branding to Virgin Media in early 2007. This was not an instantaneous process, and although it kicked off at the beginning of September 2006, it was apparently still ongoing in December. Nevertheless, it would appear that the bulk of the changes took place early on.

Two of the resulting channel reshuffles we were able to document with reasonable accuracy involved UKTV's Factual and Lifestyle channel portfolios. On the old Telewest EPG the UKTV channels were positioned in continuous genre blocks at the top of their respective genre section, while they were much more spread on the old NTL EPG. The EPG merger involved NTL adopting a Telewest style EPG (which was considered more efficient), and with NTL accounting for around two thirds of the subscriber base, this effectively meant that, for the majority of viewers on the NTL/Telewest (soon to be Virgin Media) platform, the UKTV lifestyle and factual channels would

be consolidated in a continuous block at the top of their respective genre sections.

Such a move must certainly be seen as a significant improvement in EPG prominence for UKTV 's factual and lifestyle channel groups and, in line with expectations, UKTV's factual and lifestyle channels showed statistically significant improvements (of 10% and 9% respectively) in their performance over the course of the 6-month period centred on the start of the reshuffle, and the reference benchmarks also proved to be statistically stable over this period. Unfortunately, it proved impossible to tie these gains down to a performance step change at the time of the reshuffle, with the structural break model indicating that an underlying (upward) performance time trend was likely to be the primary cause of these gains. On the other hand, the fact that no such time trends were evident in the reference benchmarks, coupled with the knowledge that this reshuffle was a relatively drawn out process that only affected about two thirds of the Virgin Media subscriber base (making its impact much harder to detect and attribute to a specific point in time), pushes the balance of the evidence if favour of an EPG change induced viewing impact, even if this is difficult to isolate and quantify.

The next 3 examples all resulted in intuitively correct and statistically significant performance step changes that coincided in time with the dates of their respective EPG reshuffles. This is a strong piece of evidence in favour of an EPG change induced viewing impact, but there was also enough unexplained instability in the associated reference benchmarks to put this in some doubt. In every case, however, the evidence did not suggest that what was happening with the reference benchmarks was likely to counteract fully the viewing impacts observed for the reshuffled channels, pushing the balance of the evidence in favour of at least a proportion of the observed viewing changes being the result of a change in EPG prominence.

The sixth example involved Paramount Comedy2+1 moving up 27 channel ranks in the Entertainment section of the Sky EPG, though it still remained well below its primary channel after this move, making any additional viewing impact due to a closer association with its primary channel highly unlikely. In any case, though Paramount Comedy2+1 Share of viewing did rise slightly (by about 8%) after this move, this proved to be too small to be statistically significant. On the basis of this evidence alone this would therefore be a good example of a scenario where a significant move up an EPG did not result in a significant viewing impact. Both reference benchmarks, however, were subject to downward pressure at the time of the reshuffle, though this proved to be statistically significant for only one of them (Paramount Comedy2 on Virgin Media), where there was a substantial decline in performance of 25%. This opens up the distinct possibility that Paramount Comedy2+1's move up the Sky EPG may have helped counteract an underlying downward pressure on its performance, and is why this example has been classed as weakly significant.

In the final example Hallmark's Share of viewing rose by about 11% following its 18 channel rank move up the Entertainment section of the Sky

EPG. This did not, however, prove to be statistically significant on the t-test, suggesting a high level of variability in the underlying performance data. The structural break test, however, showed a strong (statistically significant) upward performance time-trend, though there was no significant structural break detectable at the time of the reshuffle. On its own, this evidence would therefore suggest that an underlying growth phase in Hallmark's performance cycle is likely to have masked any additional positive viewing impact that may have resulted from the reshuffle, and on the basis of this evidence alone we would need to class this example as inconclusive at best. One would, however, expect a significant growth phase in the performance cycle of a significant digital channel like Hallmark to be reflected in the performance time series of it reference benchmark (i.e. Hallmark on Virgin Media), and yet this remained totally stable at a time when Hallmark on Sky was experiencing significant underlying performance growth. This therefore opens up the real possibility that (though it may be hard to isolate and quantify), Hallmark's gain in EPG prominence did result in a significant improvement in its performance, and is ultimately why this example is classed as weakly significant.

4.6. EPG Change Examples where the Evidence, Both For and Against a Viewing Impact, is Inconclusive

Of the 33 EPG reshuffle examples that we analysed, 4 (12%) proved to be inconclusive. Of these 4 examples, 2 were from the Freeview EPG, and the remaining 2 came from the Sky EPGs. A summary overview of the Inconclusive results (in chronological order by reshuffle date) is given in Section 6.4 (Confidential Appendix D) below, and full analytical output tables and charts can be found in Section 6.9 (Confidential Appendix I).

The first example involves ITV3 moving up 23 channel ranks into ninth place on the Freeview EPG channel list, and such a substantial move for a major digital channel would appear to be an ideal case study for assessing the viewing impact of EPG prominence. In the event, ITV3's Share of viewing actually dropped by 5% in the 6-week period following the reshuffle, although this proved to be too small a decline to be statistically significant. On the surface of it, this would therefore seem to be a clear cut example against the thesis that EPG prominence is like to have a significant viewing impact. Closer investigation of the circumstances surrounding this reshuffle, however, revealed that it also coincided with no less than 3 major channel launches on the Freeview platform. More4, Sky 3 and ITV4 all launched within 2 weeks of the reshuffle, and were already averaging a combined total of 4.2 Share points over their first 4 weeks.

It is therefore rather pertinent that ITV3's Share only dropped by a marginal 0.2 Share points (down 5%), with ITV2, for example, losing 0.5 Share points (down 10%) in the 6 weeks following the reshuffle. As ITV2 did not change

position during the reshuffle, this could be interpreted as evidence that ITV3 may have benefited from its move up the EPG. Looking at the reference benchmarks (i.e. ITV3 on Sky and Virgin Media), however, does not improve our understanding of the situation. We know that the three aforementioned channels also launched on Sky and Virgin Media, and yet ITV3's Share of viewing on these platforms remained highly stable over the period in question. As there was no countervailing improvement in EPG prominence for ITV3 on theses platforms, one might have expected a significant performance drop as a result of the new channel launches. On the other hand, the much higher levels of audience fragmentation on the Virgin Media and Sky platforms (which carry substantially more channels than Freeview), also makes it much more likely that any competitive impact on ITV3 would not manifest itself as clearly on these platforms as it would on Freeview. On balance, we are therefore unable to reach any plausible conclusions, either for or against an EPG induced viewing impact.

The next 2 examples, both involving Discovery Home and Health, both resulted in intuitively correct and statistically significant performance step changes that coincided in time with the dates of their respective EPG reshuffles. This is a strong piece of evidence in favour of an EPG change induced viewing impact, but there was such a high level of unexplained instability in the associated reference benchmarks to put this in serious doubt. Unfortunately, a closer investigation of what was causing these countervailing variations in the reference benchmarks did not come up with any definitive answers. There were no obvious scheduling changes, and it is certainly possible that what was causing the instability in the reference benchmarks had no impact on the reshuffled channels. However, as it is impossible to be sure, we have erred on the side of caution and classed these two examples as inconclusive.

The final example covers Film 4's 16 channel rank move up the Freeview EPG, which coincided with a counterintuitive and statistically significant drop in its Share of viewing on the Freeview platform in the period immediately after the reshuffle. There was, however, an even more significant decline for the Virgin Media reference benchmark, suggesting that a schedule based or seasonal downturn may have been counteracting any potential benefits associated with the gain in EPG prominence. On the other hand, as this was not additionally confirmed by the Sky reference benchmark (which remained statistically stable), it must remain a moot point. Another explanation is that the necessary retuning of the Freeview reception equipment following this reshuffle caused some viewers to lose access (at least temporarily) to the channel. There were certainly lots of complaints on the relevant internet forums, not least because within three weeks there was another retune to accommodate further (albeit relatively minor) positioning changes for a number of other channels. It is noteworthy that there was a significant recovery in Film4's performance on Freeview following this second retune. In any case, there are too many significant confounding influences to reach any definitive conclusions.

4.7. EPG Change Examples where the Evidence does Not Support a Viewing Impact

Of the 33 EPG reshuffle examples that we analysed, only 1 (3%), relating to a move in the lower half of the Entertainment section of the Sky EPG, provided clear evidence against an EPG reshuffle induced viewing impact. A summary overview of this result is given in Section 6.4 (Confidential Appendix D) below, while a full analytical output table can be found in Section 6.10 (Confidential Appendix J).

Despite moving up 27 channel ranks (from page 9 to page 6) of the Entertainment section of the Sky EPG, MTV R only made a small (6%) Share gain in the 6 weeks following this move. This did not prove to be statistically significant, and could just as well have been a product of the underlying variability in the performance data. Crucially, the reference benchmark (MTV R on Virgin Media) was also statistically stable at the time of the reshuffle, making this an unambiguous example against the thesis that EPG prominence is like to have a significant viewing impact.

4.8. Establishing if EPG Change Induced Viewing Impacts are Likely to be Permanent

It is also important to establish whether or not the impact of any EPG changes is likely to be permanent. As pointed out in the Introduction, the highly competitive nature of the UK television market, coupled with the rapid growth in multichannel penetration and other technological innovations, makes it difficult to isolate the viewing impact of an EPG change across a longer performance timeframe. We have found from experience that restricting the analysis to six weeks either side of an EPG change for individuals channels (and 3 months either side of an EPG change for channel groups) represents the best working compromise, whereby a statistically significant impact is likely to represent a permanent underlying structural change. Nevertheless, it is important to consider any additional evidence for the likely persistence of the viewing impact of an EPG change, and we have therefore analysed 4 key examples over a much longer 2-year timeframe in this section.

It is also important to note that we did not select these examples with any preconceived idea about what their long-run performance trends were likely to reveal. They were selected because they represented good examples of reshuffles involving major digital channels for which our structural break modelling had shown highly significant evidence in support of an EPG change induced viewing impact, and at the time we did not know to what extent

other confounding influences were likely to mask these impacts over a longer time frame.

The first example is for E4, which suffered a significant loss of EPG prominence when (on 20/08/2007) it was moved down 14 channel ranks on the Freeview EPG. As can be seen in Figure 4 below, E4's performance cycle is dominated by perennial spikes and downturns that correlate closely with the various Big Brother broadcasts, and it is also clear that Big Brother did better in 2007 than it did in 2008. At the time of the reshuffle, however, there was a significant and persistent structural downturn in E4's Share of viewing on the Freeview platform that is not mirrored in the long run performance time-series of E4 on the Cable and Satellite platforms, making this a very compelling example in favour of the long-term persistence of an EPG change induced viewing impact.

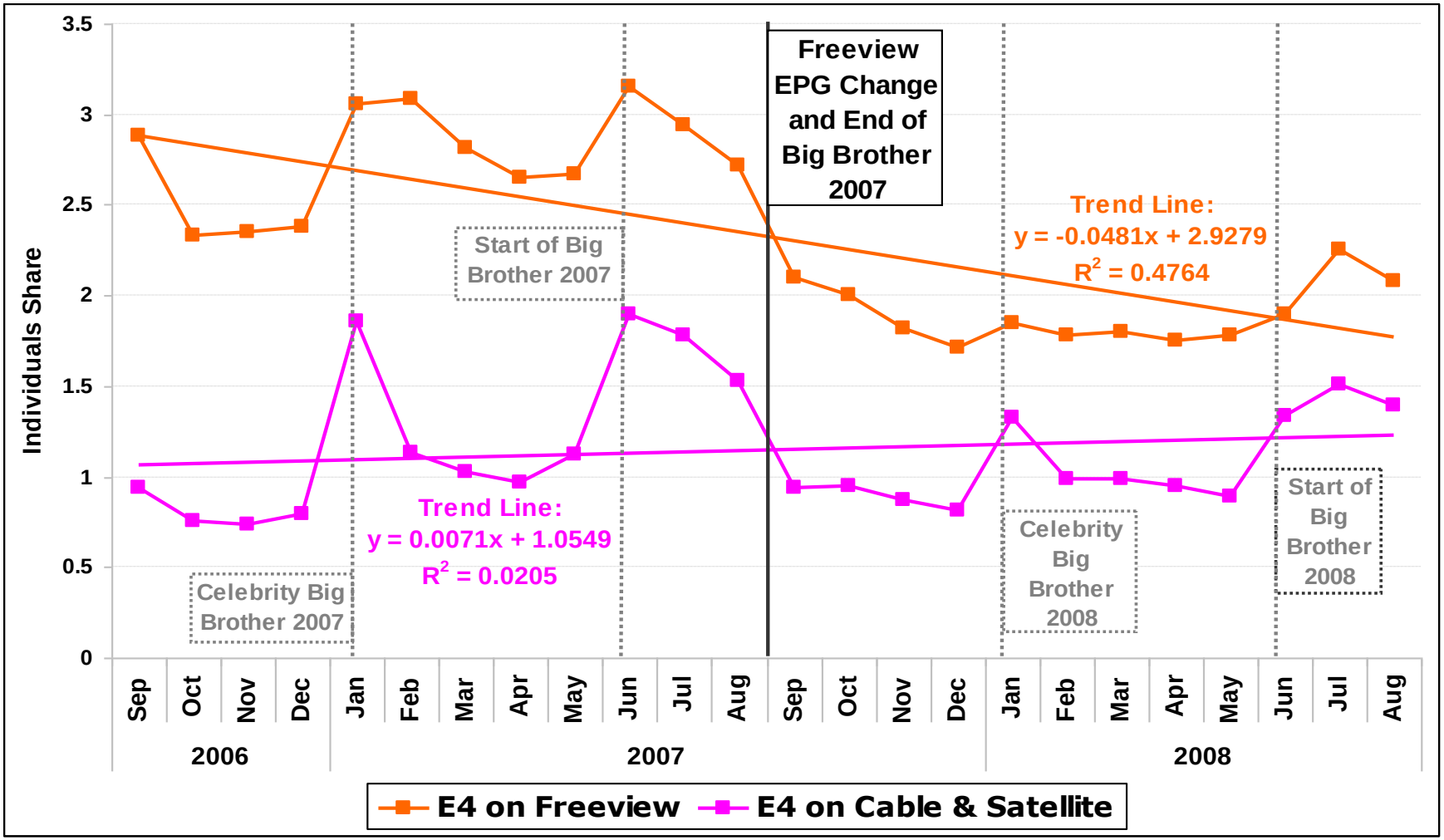
The second example is for Virgin1 (Total),[18] which gained in prominence on the Sky EPG by moving up 29 channel ranks on 20/02/2008. As can be seen in Figure 5 below, there is was a significant and persistent structural upturn in Virgin1's performance time series on the Satellite platform at the time of the reshuffle, and this was not mirrored in the corresponding performance time series of Virgin 1 on Cable and Freeview, making this another compelling example in favour of the long-term persistence of an EPG change induced viewing impact.

The final two examples relate to G.O.L.D.+1 and Alibi+1 suffering a significant loss of prominence on the Sky EPG in early October 2008. As can be seen in Figure 6 and Figure 7 below, there was a significant and persistent structural downturn in G.O.L.D.+1's and Alibi+1's Share of viewing on the Satellite platform at the time of the reshuffle. There was no evidence of any corresponding downturn in Alibi+1's long run performance time series on Cable, and while there was some downward pressure on G.O.L.D.+1's Cable audience,[19] this was of a different order of magnitude to the much larger structural decline suffered by G.O.L.D.+1 on Satellite. On balance both these examples therefore also provide strong evidence in support of the long-term persistence of EPG change induced viewing impacts.

[18] As Vigin1 and Virgin1+1 have consecutive EPG places and moved up the Sky EPG together, they have been treated as a single channel for the purpose of this impact assessment.

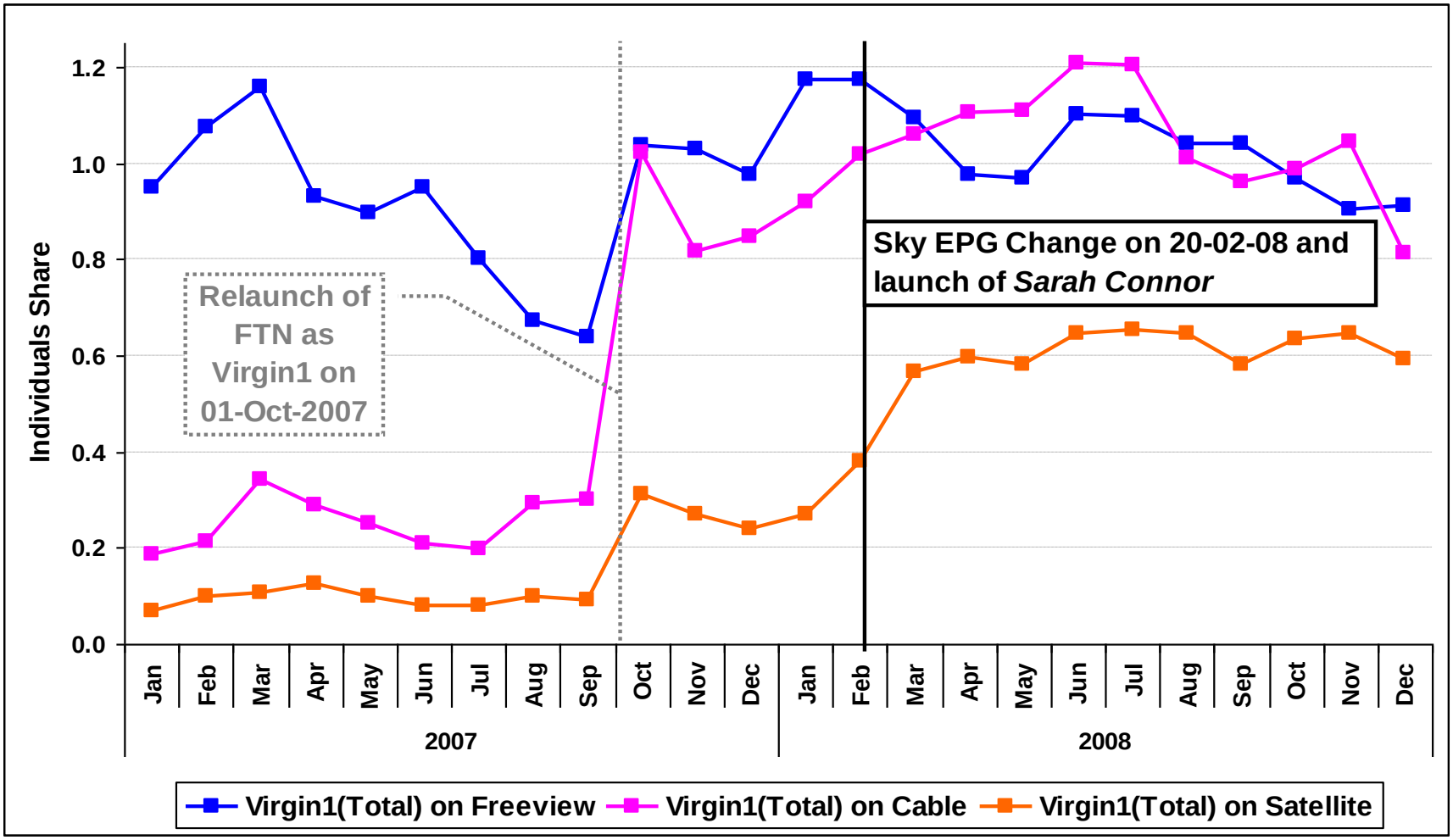
[19] This was almost certainly due to the competitive impact of having Watch launch just ahead of it on the Virgin Media EPG.

Figure 4: E4 Long Run Performance Trend (Sep-2006 to Aug-2008)



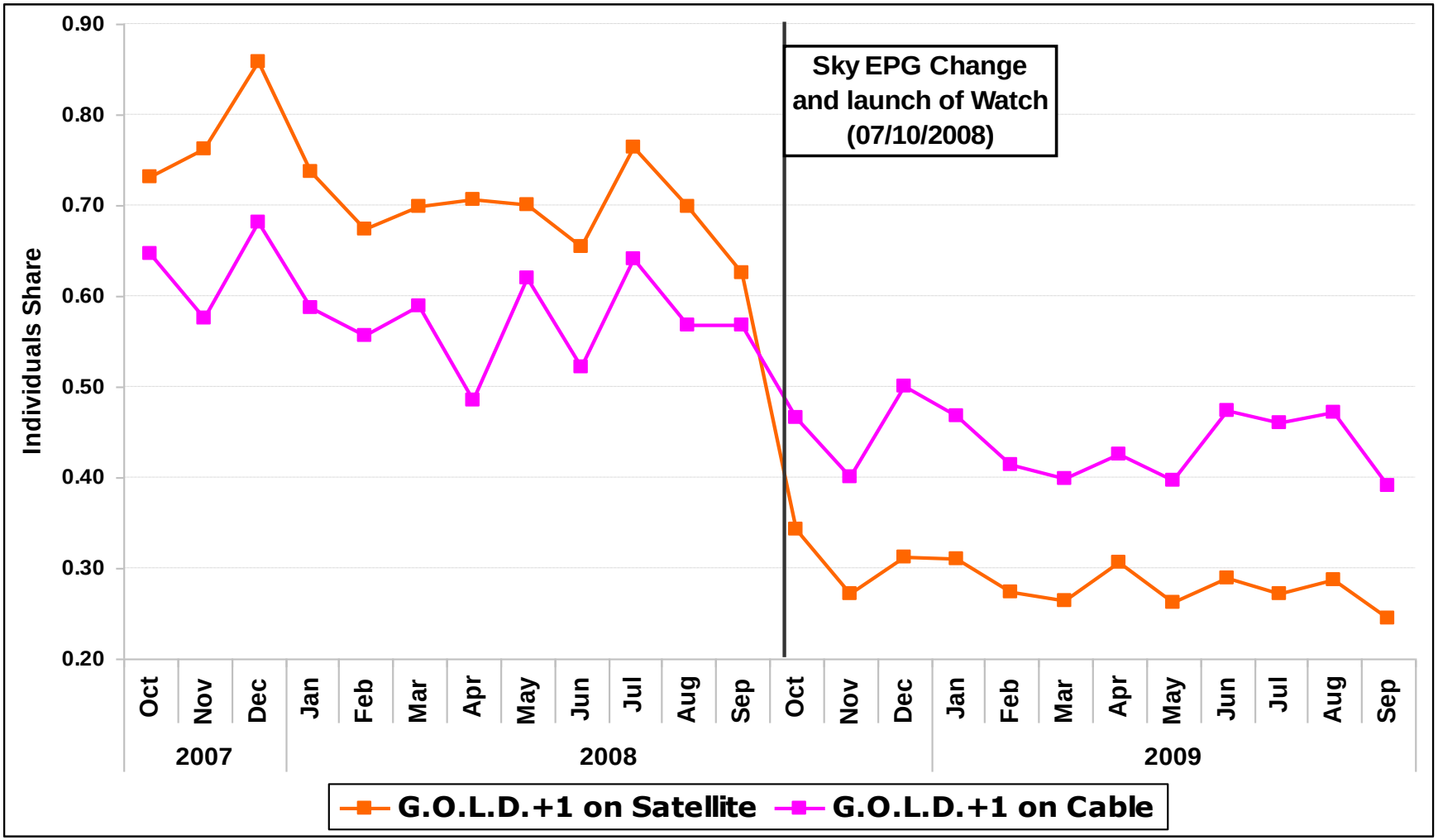
Source: Attentional/BARB

Figure 5: Virgin 1 (Total) Long Run Performance Trend (Jan-2007 to Dec-2008)



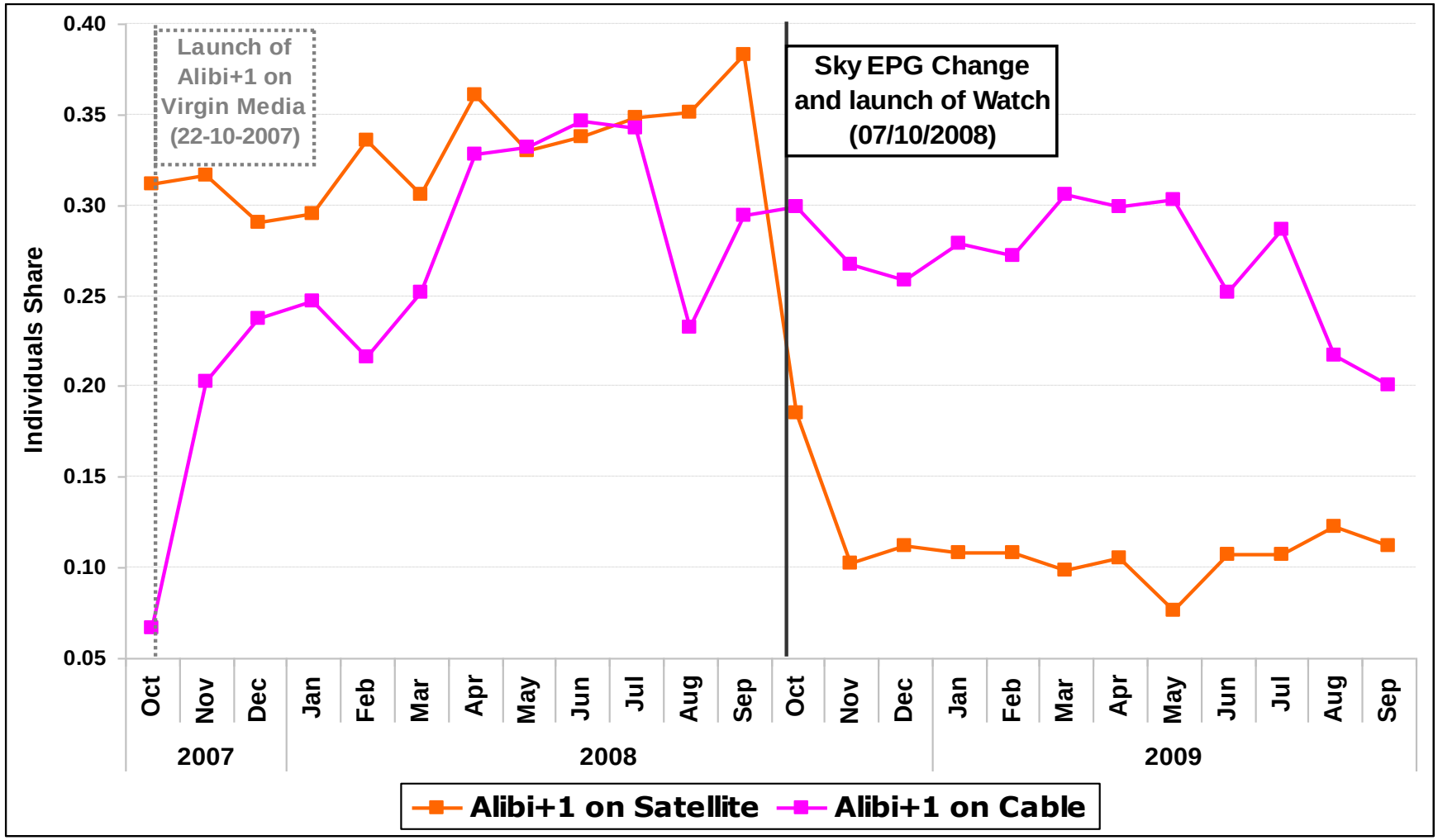
Source: Attentional/BARB

Figure 6: G.O.L.D.+1 Long Run Performance Trend (Oct-2007 to Sep-2009)



Source: Attentional/BARB

Figure 7: Alibi+1 Long Run Performance Trend (Oct-2007 to Sep-2009)



Source: Attentional/BARB

4.9. Some Additional Evidence

We have also been able to analyse one international example of a channel gaining page one EPG prominence. This involved the Irish channel, 3e, moving from number 182 to 105 on Sky's Irish EPG (on 12/10/2009), an upward move of approximately 70 channel ranks, from the middle of page 8 to the middle of page 1 of the Entertainment section. This move coincided with a statistically significant Share increase of 28.1% in the 6 weeks following the reshuffle, with no significant time trends over the 12 week period in question. Analysing 3e's performance over a longer timeframe, however, shows that this upward step change was followed by a significant downward step change (again with no underlying time trend) in late November 2009, with the channel not recovering until February 2010. Full analytical output tables and charts can be found in Section 6.11 (Confidential Appendix K) below.

It is not clear what caused the late November downturn in 3e's performance, following the performance boost at the time of the reshuffle in early October. There were no significant scheduling changes at the time, so it may have been a seasonal factor. Another possibility is that the initial positive impact of the EPG reshuffle could have worn off, though it isn't clear why this would manifest itself as a step change rather than a downward time trend, as it seems unlikely that viewers would suddenly decide to stop sampling the channel after exactly 6 weeks, but would be more likely to trail off steadily over time. In any case, the absence of a reference benchmark (it is not possible to separate Cable from Satellite viewing on the Irish audience panel) makes it impossible to tell for sure. The balance of the evidence, however, is still in favour of an EPG change induced viewing impact having occurred, though there is enough uncertainty for the 3e reshuffle to be classed as only weakly significant (or, at best, significant, but certainly not highly significant) in this respect.

To supplement the evidence from our analysis of actual EPG reshuffles, we also compared the performance of channels across two different EPGs where they happen to be on the first page of one but further down on the other. As can be seen in the tables in Section 6.2 (Appendix B) below, the results are broadly in line with expectations in that page one prominence does seem to make a difference to performance, with channels generally doing better when they are on page one. With the exception of Sky2 (which, in 2009, had the same Share of viewing on both platforms), all those remaining channels that were on page 1 of the Sky EPG but lower down of the Virgin Media EPG (i.e. Sky1, Sky3, Watch and G.OL.D.) had significantly lower viewing Shares on Virgin Media than they did on Sky in 2009. The same is also true when we turn this around, though only one channel (BBC3) on the first page of the Virgin Media EPG isn't also on the first page of the Sky EPG. On balance, however, we need to be cautious about reading too much into these results, as a number of confounding factors (subscription package based differences in channel availability between platforms, for example) are also likely to come into play.

4.10. Conclusions

To recap, of the 33 UK channel based EPG reshuffles that we studied, 18 (55%) were highly significant, 3 (9%) were significant and a further 7 (21%) were weakly significant. In other words, 85% of the examples we analysed provided significant support (albeit of varying degrees of certainty) for the thesis that EPG positioning is likely to have a viewing impact. Another 4 examples (12%) proved to be inconclusive, while only 1 example (3%) provided clear evidence in support of the thesis that EPG positioning is unlikely to have a viewing impact.

On balance, the evidence therefore strongly supports the view that EPG positioning is likely to have a significant impact on a channel's performance, particularly when this involves a very major loss of prominence, as would be the case for a move from near the top (page 1) to the bottom of the Entertainment sections of the three primary EPGs under consideration. To begin to assess the potential viewing impact of such a loss of prominence on ITV1 and Five, it is therefore important that we determine a likely viewing impact range based on the empirical evidence from our analysis of actual EPG reshuffles. As these estimates need to be as robust as possible, they will be based on the most relevant examples from the highly significant reshuffle category.

For the Freeview platform our only relevant example is E4's 14 channel rank move down the Entertainment section. This move proved to be highly significant, and suggests that the negative EPG change viewing impact of a major loss of prominence is likely to be around 15%. If we factor in the worst case cannibalization assumption, accounting for the fact that this reshuffle also resulted in E4 moving next to E4+1, the negative impact of a major loss of prominence would still be around 10%. Furthermore, given that the proposed loss of prominence we will be modelling is significantly greater than that suffered by E4, it seems reasonable to assume that the overall impact of a significant loss of EPG prominence on the Freeview platform is likely to result in a 10% to 20% reduction in a given channel's pre-reshuffle Share of viewing.

Moving onto the Cable platform, our two highly significant examples, though clearly showing that EPG positioning is important, are based on the impact of a channel group being leapfrogged by a group of significant competitors, making them less suitable for assessing the likely range of viewing impacts resulting from a loss of prominence caused by a move down the EPG. Consequently, in the absence of any other direct evidence, and given that the primary channel mix on the Sky and Virgin Media EPGs is quite similar, the most logical option is for us to apply the evidence from the Satellite EPG to the Cable EPG as well.

There is certainly no shortage of suitable EPG change examples from the Sky EPG, with only 1 of the 14 highly significant examples relating to a channel being leapfrogged by a close competitor, rather than making a significant move up or down the EPG. The only potential issue is that there is quite a

heavy reliance on examples relating to timeshifted (i.e. +1) channels, which account for 9 out of the 13 remaining examples. On the other hand, as already illustrated in our detailed discussions of these examples in Section 4.3 above, we always take the confounding impact of any likely interactions between timeshifted channels and their primary counterparts into account. On balance, we therefore have a good basis for making EPG change impact range inferences.

However, as can be seen in Section 6.5 (Confidential Appendix E) below, there is at best only a weak correlation between the relative size of an EPG move and the relative size of the associated viewing impact. That being said, it is important to remember that not all the listed viewing impacts relate to moves within the Entertainment section of the Sky EPG, and moves within the other genre sections of the Sky EPG, though generally smaller in terms of channel ranks lost or gained, may still represent very significant changes in terms of a channel's EPG prominence. Indeed, even within the Entertainment section of the Sky EPG, much will depend on where within its 10 pages a move occurs. For example, there is some evidence to suggest that moves that take a channel from the lower into the upper half of a given genre section are more likely to have a significant viewing impact than moves (even larger ones) restricted entirely to the bottom half.[20] It is therefore best to think of the examples in Section 6.5 (Confidential Appendix E) as representing the viewing impacts of significant changes in a given channel's EPG prominence. Using this interpretation, there is good evidence to suggest that the most plausible impact range for a significant loss of EPG prominence on the Satellite and Cable EPGs is likely to be a negative EPG change induced viewing impact of between 20% and 40%. In other words, to give a more concrete example, on the basis of the available empirical evidence, a major digital entertainment channel moving from somewhere near the top to somewhere near the bottom of the Entertainment section of the Sky and Virgin Media EPGs is likely to lose between 20% and 40% of its Share of viewing on these platforms.

[20] The only EPG reshuffle (of the 33 analysed) to support an argument that EPG positioning does not have an impact on audience performance was for a substantial move (of 27 channel ranks) confined entirely to the lower half of the Entertainment section of the Sky EPG. See Section 4.7 above for further details.

5. Estimating the Impact of Losing EPG Prominence

In this section we outline our methodology for generating a range of audience impact forecasts for ITV1 and Five resulting from a significant loss of EPG prominence. Our methodology combines the empirical evidence for our analysis of actual EPG change moves with an algorithm designed to take account of the extent to which the uniqueness of the content and overall brand strength of ITV1 and Five are likely to mitigate the viewing impact of a significant move down the EPG. This results in a number of scenario options that vary in the extent to which they are tied to the available empirical evidence, and therefore also as to how speculative they are. For Five, the range of predicted outcomes generated by the central scenarios gives a minimum performance loss of 6.5% and a maximum loss of 23.9%. For ITV1, on the other hand, the corresponding minimum predicted performance loss is close to negligible at 0.3%, with the maximum predicted loss still remaining relatively small at 2.4%. That being said, a much more speculative (though not totally implausible) scenario puts the likely loss for ITV1 at between 8.4% and 16.8%. The corresponding loss under the same scenario for Five is somewhere between 13.4% and 26.8%.

5.1. Impact Estimation Methodology

The evidence from our study of actual EPG change examples suggests that on the Freeview platform the overall impact of a significant loss of prominence for a major non-terrestrial entertainment channel (like E4) is likely to result in a 10% to 20% reduction in its pre-reshuffle Share of viewing. On the Satellite and Cable platforms, the evidence suggests that this is likely to result in a 20% to 40% decline, a probable reflection of the larger number of channels available on these platforms. On the basis of these results, we can therefore stipulate a low, medium and high EPG change viewing impact for each of the three platforms under consideration, as shown in Table 2 below.

Table 2: Viewing Impact Ranges Resulting from a Significant Loss of EPG Prominence

Viewing Impact of a Significant Loss of EPG Prominence	Platforms		
	Freeview	*Cable*	*Satellite*
Low	Down 10%	Down 20%	
Medium	Down 15%	Down 30%	
High	Down 20%	Down 40%	

Source: Attentional/BARB

A significant loss of prominence for an entertainment channel is broadly defined as a move from a prominent position near the top of the Entertainment section (generally within the top third) to a position near the bottom (generally within the bottom third). The most extreme case, which is what we are assuming would happen with ITV1 and Five, would be a move from the first to the last page of the Entertainment section on each of the three EPGs under consideration.

This gives us a starting point for generating a range of impact estimates for ITV1 and Five. There is, however, a significant gap in our knowledge of the likely viewing impact of a significant loss of EPG prominence, as we have been unable to study actual examples of EPG reshuffles involving channels with the brand strength and Share of viewing of Five and ITV1. We simply have no empirical evidence to tell us what is likely to happen to the Share of viewing of programmes like *Coronation Street* on ITV1 and *Neighbours* on Five, if either of these channels were to lose their prominent (page one) EPG slots. What we do know, on the other hand, is that the impact bands outlined above are likely to reflect the full impact on a channel like E4, while the highest rating of the digital channels, ITV2, is likely to give an indication of where (given the limitations of the empirical evidence) the upper limits of an EPG reshuffle induced viewing impact are likely to fall, beyond which we are on much more speculative ground.

We therefore grouped all the programme titles that went out on E4 and ITV2 in 2009 according to which Share bands their average Individuals Share fell in, on each of the three platforms under consideration. The Share bands we used were at one Share point intervals, starting with titles that average under 1 Share point, 1 to 2 Share points, 2 to 3 Share points, etc., and

ending with those titles that averaged 10 Share points or more.[21] For completeness we did this for the primary channels and the combined (Total) performance of the primary and timeshifted channels as well. Once the programme titles had been allocated to their respective Share bands, we calculated what proportion of 2009 channel viewing (on each of the three platforms) the programme titles in each of the Share bands accounted for. The results can be seen in Table 3 below.

[21] The advantage of using average Share of viewing rather than average Audience is that the former measure is not inherently biased towards peak-time programmes. The number of people watching television in peak-time is very high, and so even a relatively mediocre Share in peak-time is likely to result in a higher average Audience than a daytime programme with a much higher Share. In the context of an EPG change impact, however, we are ultimately interested in whether not people are likely to specifically seek out a title even when the channel has moved down the EPG and is therefore more difficult to find. Share of viewing is a better measure of this, as it tells us what proportion of those people watching television chose to watch a given title. It therefore does not automatically exclude popular daytime programmes with a strong following (and hence high Share) from being placed in a higher performance band, where it might have some measure of immunity to an EPG change impact, even though fewer people are available to watch them than in peak-time.

Table 3: Proportion of channel viewing going to programme titles with an average Individuals Share in the specified Share Band ranges in 2009

Share Bands	Proportion of Channel Viewing											
	Freeview Platform				Cable Platform				Satellite Platform			
	ITV2	ITV2 (Total)	E4	E4 (Total)	ITV2	ITV2 (Total)	E4	E4 (Total)	ITV2	ITV2 (Total)	E4	E4 (Total)
under 1	0.24%	0.03%	2.00%	0.42%	4.56%	4.56%	29.75%	9.19%	11.68%	5.86%	16.70%	4.53%
1 to 2	8.40%	5.48%	45.16%	8.41%	21.61%	21.60%	45.29%	63.17%	25.62%	19.31%	60.97%	38.08%
2 to 3	22.55%	15.38%	46.55%	37.03%	22.30%	22.30%	18.21%	19.53%	27.10%	28.16%	16.77%	50.16%
3 to 4	17.74%	12.90%	3.83%	46.68%	12.56%	12.56%	5.45%	4.87%	16.84%	11.14%	3.93%	2.52%
4 to 5	26.30%	15.30%	2.39%	4.89%	16.23%	16.23%	0.00%	2.24%	14.73%	17.69%	1.63%	3.33%
5 to 6	8.73%	26.54%	0.07%	2.36%	19.81%	19.82%	1.30%	0.99%	1.77%	13.99%	0.00%	1.38%
6 to 7	1.59%	7.05%	0.00%	0.16%	1.40%	1.40%	0.00%	0.00%	0.52%	1.26%	0.00%	0.00%
7 to 8	13.65%	2.67%	0.00%	0.06%	1.53%	1.53%	0.00%	0.00%	1.74%	1.14%	0.00%	0.00%
8 to 9	0.15%	0.80%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.45%	0.00%	0.00%
9 to 10	0.64%	12.40%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Over 10	0.00%	1.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Grand Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Greater than 0.5%

Source: Attentional/BARB

Table 3 shows that on E4 the vast bulk of the viewing, on all three platforms, was to programme titles averaging less than 5 Share points, and it is therefore logical for us to assume that our first EPG change Impact Share Band should apply to programme titles that average less than 5 Share points. On ITV2, however, there was still a significant proportion of viewing on the Freeview platform going to titles averaging between 5 and 10 Share points, dropping to 5 to 8 Share points on the Cable and Satellite platforms. This therefore provides us with the basis for creating a second Impact Share Band, for programme titles averaging between 5 and 10 Share points on the Freeview platform and between 5 and 8 Share points on the Cable and Satellite platforms. By default we therefore also have a third Impact Share Band, for programme titles averaging over 8 Share points on the Cable and Satellite platforms, and over 10 Share points on the Freeview platform. A good intuitive explanation of the logic behind the creation of these Impact Share Bands is that the first will define the viewing, on any given channel, that, according to the empirical evidence, is most likely to be subject to an EPG change induced viewing impact, the second will define the viewing that is still likely to be subject to an EPG change induced viewing impact, but for which the empirical evidence is somewhat more speculative, while the third Impact Share Band defines the viewing that falls beyond the scope of the available empirical evidence, and for which we are therefore on highly speculative ground when it comes to assessing any potential EPG change induced viewing impacts.

Table 4 and Table 5 below given the proportion of ITV1's and Five's 2009 viewing going to programme titles in the three Impact Share Band categories outlined above, and, being the foundations upon which these categories are based, ITV2 and E4 have also been included as useful reference benchmarks. As is to be expected, the vast bulk of ITV1 viewing, over 90% on all three platforms, falls into Impact Share Band 3.[22] Only around 25.6% of Five's viewing, however, comes from titles with an average Share of viewing high enough to make it into Impact Share Band 3 on the Freeview platform, and this falls to 14.5% and 16.5% on the Cable and Satellite platforms respectively. As we would expect, none of ITV2's and E4's programme titles perform well enough to make it into Impact Share Band 3, although ITV2 has a substantial minority of its viewing (most notably on Freeview and Cable) coming from titles in Impact Share Band 2. Virtually all of E4's viewing comes from programme titles in Impact Share Band 1.

[22] It should be noted that regional programmes have not been included among the titles used for ITV1. This is because these titles have inherently low Shares (almost invariably below 5 Share points) due to the limited number of people that can watch them compared with a network programme. Looking at the regional slots, however, we find that these generally do well across the network as a whole, suggesting that they have a loyal following at the individual regional level. As a group they are therefore likely to average significantly more than the Share point limit for the third Impact Share Band, but as they cannot be readily amalgamated, it is best to exclude them from the analysis altogether.

Table 4: Proportion of channel viewing going to programme titles in the three Impact Share Band categories (2009)

Programme Title Share Bands	Proportion of Channel Viewing (2009)													
	Share band	Freeview Platform				Share band	Cable Platform				Share band	Satellite Platform			
		ITV1	five	ITV2	E4		ITV1	five	ITV2	E4		ITV1	five	ITV2	E4
Impact Share Band 1 (Freeview 0-5; CabSat 0-5)	0-5	0.3%	20.2%	75.2%	99.9%	0-5	2.6%	51.2%	77.3%	98.7%	0-5	2.8%	58.8%	96.0%	100%
Impact Share Band 2 (Freeview 5-10; CabSat 5-8)	5-10	6.3%	54.1%	24.8%	0.1%	5-8	4.2%	34.3%	22.7%	1.3%	5-8	6.1%	24.6%	4.0%	0.0%
Impact Share Band 3 (Freeview 10+; CabSat 8+)	10+	93.4%	25.6%	0.0%	0.0%	8+	93.3%	14.5%	0.0%	0.0%	8+	91.0%	16.6%	0.0%	0.0%

Source: Attentional/BARB

Table 5: Proportion of channel viewing going to programme titles in the three Impact Share Band categories (2009; higher resolution table)

Programme Title Share Bands	Proportion of Channel Viewing (2009)											
	Freeview Platform				Cable Platform				Satellite Platform			
	ITV1	five	ITV2	E4	ITV1	five	ITV2	E4	ITV1	five	ITV2	E4
under 1	0.00%	0.01%	0.24%	2.00%	0.00%	0.45%	4.56%	29.75%	0.00%	1.90%	11.68%	16.70%
1 to 2	0.00%	2.00%	8.40%	45.16%	0.19%	7.42%	21.61%	45.29%	0.20%	8.79%	25.62%	60.97%
2 to 3	0.01%	2.66%	22.55%	46.55%	0.36%	9.84%	22.30%	18.21%	0.82%	14.36%	27.10%	16.77%
3 to 4	0.13%	6.48%	17.74%	3.83%	0.72%	17.30%	12.56%	5.45%	0.92%	22.60%	16.84%	3.93%
4 to 5	0.16%	9.10%	26.30%	2.39%	1.28%	16.20%	16.23%	0.00%	0.89%	11.16%	14.73%	1.63%
5 to 6	0.86%	10.46%	8.73%	0.07%	1.34%	10.97%	19.81%	1.30%	0.92%	9.02%	1.77%	0.00%
6 to 7	0.77%	17.71%	1.59%	0.00%	1.42%	17.63%	1.40%	0.00%	1.74%	11.57%	0.52%	0.00%
7 to 8	0.95%	7.43%	13.65%	0.00%	1.43%	5.71%	1.53%	0.00%	3.47%	4.01%	1.74%	0.00%
8 to 9	2.43%	12.25%	0.15%	0.00%	3.68%	11.50%	0.00%	0.00%	6.17%	1.44%	0.00%	0.00%
9 to 10	1.27%	6.27%	0.64%	0.00%	4.90%	0.46%	0.00%	0.00%	7.19%	2.20%	0.00%	0.00%
Over 10	93.43%	25.64%	0.00%	0.00%	84.69%	2.51%	0.00%	0.00%	77.68%	12.95%	0.00%	0.00%
Impact Share Band 1 *(Freeview 0-5; CabSat 0-5)*	0.30%	20.25%	75.23%	99.93%	2.55%	51.22%	77.25%	98.70%	2.84%	58.82%	95.97%	100%
Impact Share Band 2 *(Freeview 5-10; CabSat 5-8)*	6.27%	54.12%	24.77%	0.07%	4.19%	34.31%	22.74%	1.30%	6.13%	24.60%	4.03%	0.00%
Impact Share Band 3 *(Freeview 10+; CabSat 8+)*	93.43%	25.64%	0.00%	0.00%	93.26%	14.47%	0.00%	0.00%	91.03%	16.58%	0.00%	0.00%

Source: Attentional/BARB

The channel viewing falling into each of the three programme title based Impact Share Bands can now be used as the basis for applying the Low/Medium/High EPG change impact ranges that were derived from our earlier analysis of actual EPG reshuffle examples. However, before we proceed, it is important to consider some additional assumptions about how these impacts ranges are likely to apply to each of the different Impact Share Band categories.

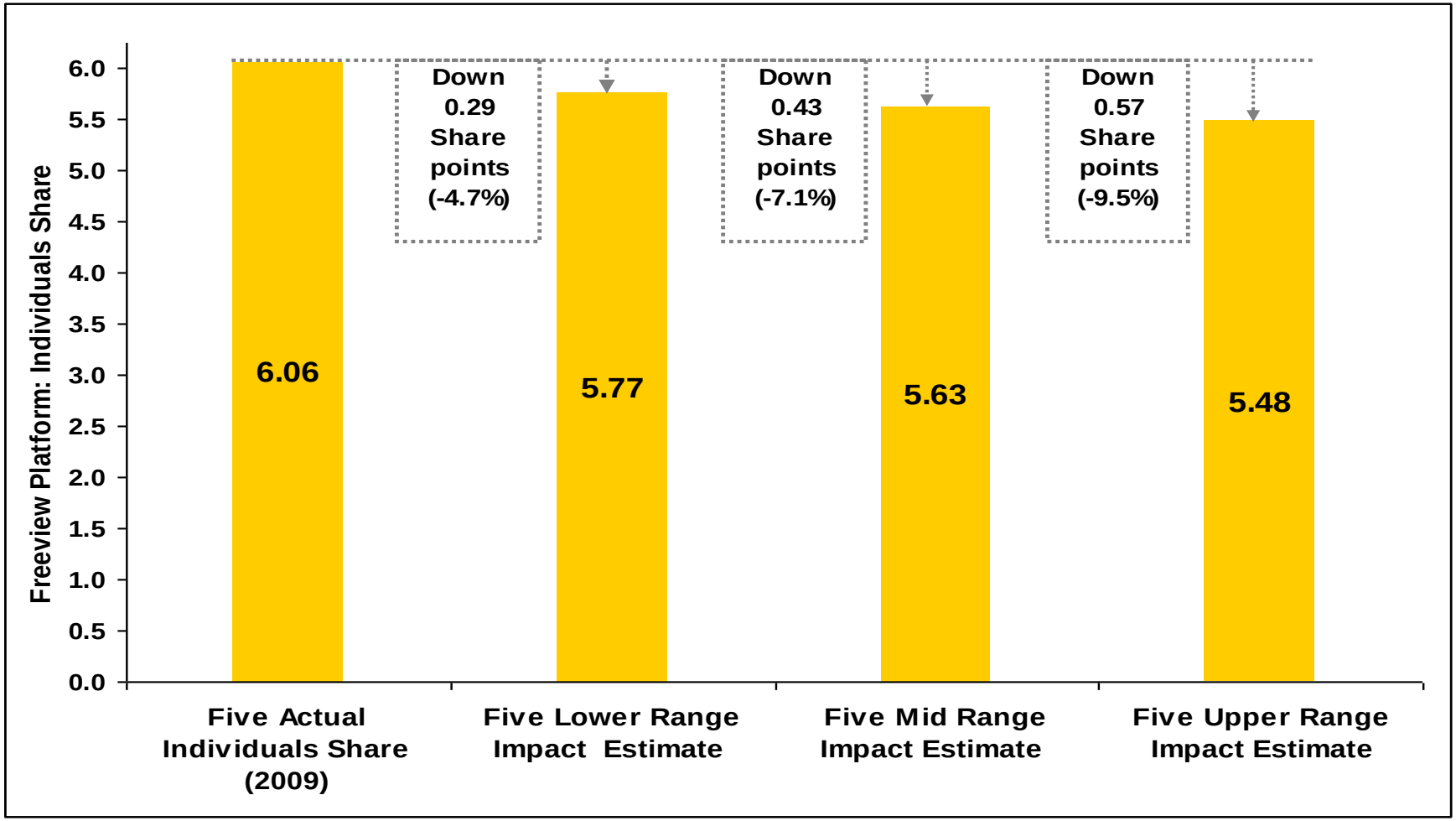
For example, in view of the limited empirical evidence, should all the viewing in Impact Share Band 3 be considered immune to an EPG change impact, or should it only be subject to half the normal impact, or something else? Conversely, should the viewing in Impact Share Band 1 always be subject to the full impact, or is there a case to be made for assuming that the terrestrial channels are likely to be immune to any EPG change impact? It is best to illustrate this with an example of how one of these potential options can be used to generate a viewing impact estimate.

Let's assume that all viewing in Impact Share Band 1 is subject to the Full impact, all viewing in Impact Share Band 2 to only Half the impact, and all viewing in Impact Share Band 3 to Zero impact. If we now take channel Five on the Freeview platform, the low impact assumption (i.e. down 10% for Full EPG impact) would mean that 20.2% of Five's viewing (i.e. that in Impact Share Band 1: viewing going to titles averaging less than 5 Share points) would drop by 10%, and 54.12% of its viewing (i.e. that in Impact Share Band 2: viewing going to titles averaging between 5 and 10 Share points) would drop by 5%, with the remaining 25.6% of Five's viewing (i.e. that in Impact Share Band 3: viewing going to titles averaging more than 10 Share points) being unaffected.

Overall, this would result in Five's viewing dropping by 4.7%. As its 2009 Individuals Share on the Freeview platform was 6.06, this would translate into a loss of 0.29 Share points, with Five's Share on the Freeview platform dropping to 5.77. We can do the same calculation under the Medium (down 15% for Full EPG impact) and High (down 20% for Full EPG impact) EPG change impact assumptions, to generate two further impact estimates for Five on the Freeview platform, as illustrated in Figure 8 below.[23]

[23] It should be noted that our impact modelling, and indeed all the analysis throughout this report, is based on viewing on the different television platforms as defined by the reception of the television sets being used (i.e. Digital Terrestrial - AKA Freeview – Cable, Satellite and Analogue Terrestrial). This is not the same as looking at what people watch in a home where the primary TV set has Sky or Virgin Media, as a significant amount of television in these homes may still be watched on a secondary analogue only (or even Freeview enabled) TV sets.

Figure 8: Low/Mid/Upper range of EPG change impact estimates for Five on the Freeview Platform, under the assumption that viewing in Share Band 1 is subject to *Full* impact, viewing in Share Band 2 to *Half* impact, and viewing in Share Band 3 to *Zero* impact.



Source: Attentional/BARB

Combining all the plausible permutations,[24] provides us with a range of 21 impact scenarios, 7 for each of the three EPG change impact ranges (i.e. Low, Mid and High). A summary of the underlying impact assumptions for each of these 21 scenarios is given in Table 6 below.

Table 6: Summary of Impact Scenario Assumptions

Share Bands	***Low Impact Scenarios*** *(Freeview 10%; CabSat 20%)*							***Mid Impact Scenarios*** *(Freeview 15%; CabSat 30%)*							***High Impact Scenarios*** *(Freeview 20%; CabSat 40%)*						
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Impact Share Band 1 *(Freeview 0-5; CabSat 0-5)*	Zero	Half	Full	Full	Full	Full	Full	Zero	Half	Full	Full	Full	Full	Full	Zero	Half	Full	Full	Full	Full	Full
Impact Share Band 2 *(Freeview 5-10; CabSat 5-8)*	Zero	Zero	Zero	Half	Full	Full	Full	Zero	Zero	Zero	Half	Full	Full	Full	Zero	Zero	Zero	Half	Full	Full	Full
Impact Share Band 3 *(Freeview 10+; CabSat 8+)*	Zero	Zero	Zero	Zero	Zero	Half	Full	Zero	Zero	Zero	Zero	Zero	Half	Full	Zero	Zero	Zero	Zero	Zero	Half	Full

Source: Attentional

To put this into context, in the preceding example, we generated three impact estimates for Five on the Freeview platform by applying the assumptions for Scenarios 4, 11 and 18. By extending this approach to cover all the scenario options, we were able to generate a range of 21 forecasts for both ITV1 and Five on each of the three platforms under consideration (i.e. Freeview, Cable and Satellite). This resulted in a total of 126 forecasts, at 21 scenario options for two channels on three platforms. We then combined these to generate a further 21 forecasts per channel for All Multichannel Platforms and (by incorporating analogue terrestrial viewing, which is assumed to be immune to any EPG related impact) we were able to do the same for All Platforms as well.[25] Full details of these results are given below.

[24] For example, if we assume that viewing in Impact Share Band 2 is immune to EPG change impacts, it would not be logical to assume that viewing in Impact Share Band 3 is subject to the full EPG viewing impact within the same scenario.
[25] All our forecasts are based on the 2009 ITV1 and Five BARB 'Network' panel audience data.

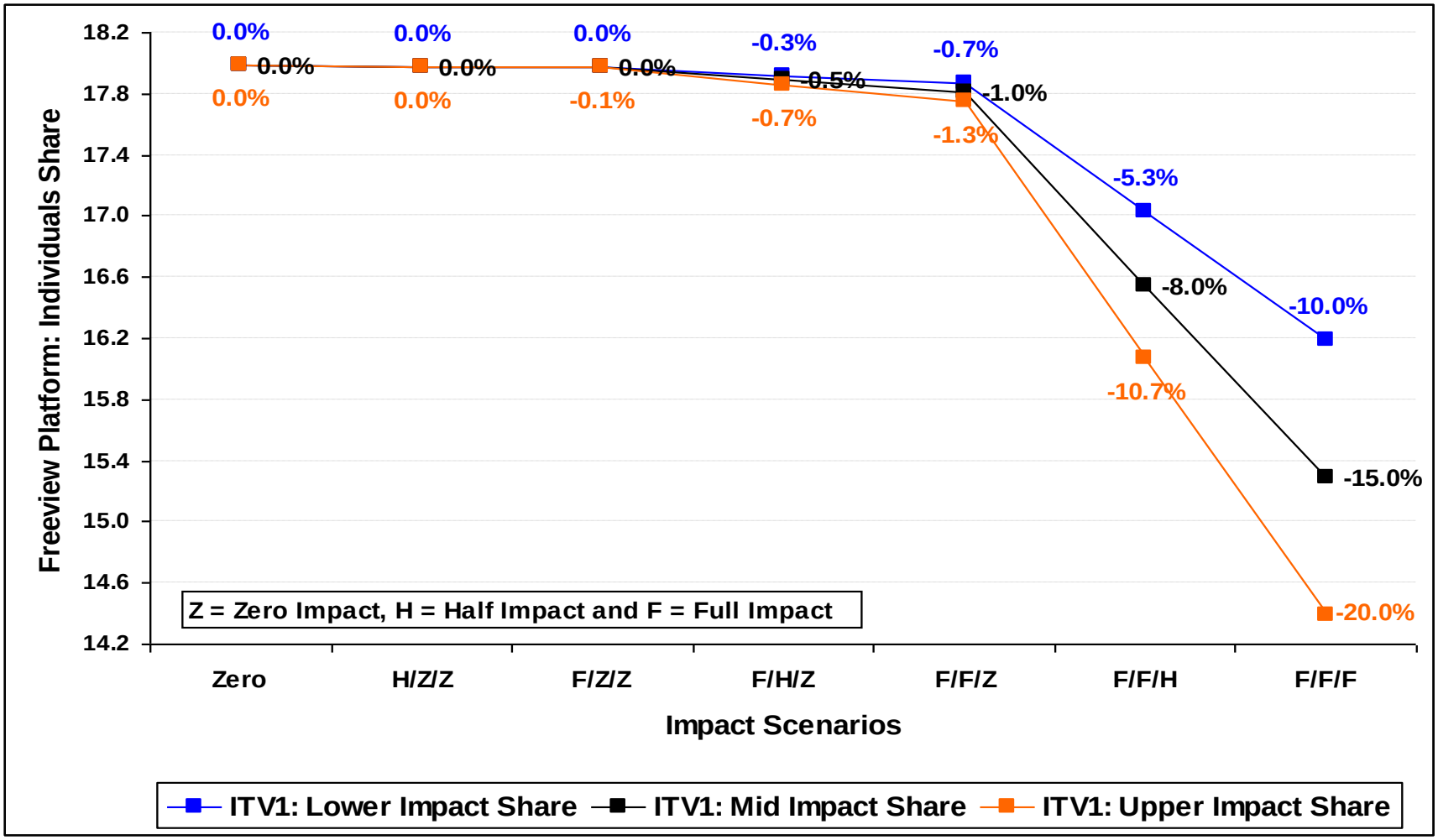
5.2. Freeview Platform Impact Estimates

Table 7: Freeview Platform Impact Estimates

Freeview Platform	ITV1									Five								
	EPG Change Impact Ranges									EPG Change Impact Ranges								
Scenarios (Viewing Impact on Programmes in Share bands: 0-5/5-10/10+)	Low (10%)			Medium (15%)			High (20%)			Low (10%)			Medium (15%)			High (20%)		
	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)
1 Zero/Zero/Zero	**17.98**	0.00	0.0%	**17.98**	0.00	0.0%	**17.98**	0.00	0.0%	**6.06**	0.00	0.0%	**6.06**	0.00	0.0%	**6.06**	0.00	0.0%
2 Half/Zero/Zero	**17.98**	0.00	0.0%	**17.98**	0.00	0.0%	**17.98**	-0.01	0.0%	**6.00**	-0.06	-1.0%	**5.96**	-0.09	-1.5%	**5.93**	-0.12	-2.0%
3 Full/Zero/Zero	**17.98**	-0.01	0.0%	**17.97**	-0.01	0.0%	**17.97**	-0.01	-0.1%	**5.93**	-0.12	-2.0%	**5.87**	-0.18	-3.0%	**5.81**	-0.25	-4.0%
4 Full/Half/Zero	**17.92**	-0.06	-0.3%	**17.89**	-0.09	-0.5%	**17.86**	-0.12	-0.7%	**5.77**	-0.29	-4.7%	**5.63**	-0.43	-7.1%	**5.48**	-0.57	-9.5%
5 Full/Full/Zero	**17.86**	-0.12	-0.7%	**17.80**	-0.18	-1.0%	**17.75**	-0.24	-1.3%	**5.61**	-0.45	-7.4%	**5.38**	-0.68	-11.2%	**5.16**	-0.90	-14.9%
6 Full/Full/Half	**17.02**	-0.96	-5.3%	**16.54**	-1.44	-8.0%	**16.07**	-1.92	-10.7%	**5.53**	-0.53	-8.7%	**5.26**	-0.79	-13.1%	**5.00**	-1.06	-17.4%
7 Full/Full/Full	**16.18**	-1.80	-10.0%	**15.28**	-2.70	-15%	**14.39**	-3.60	-20.0%	**5.45**	-0.61	-10.0%	**5.15**	-0.91	-15.0%	**4.85**	-1.21	-20.0%

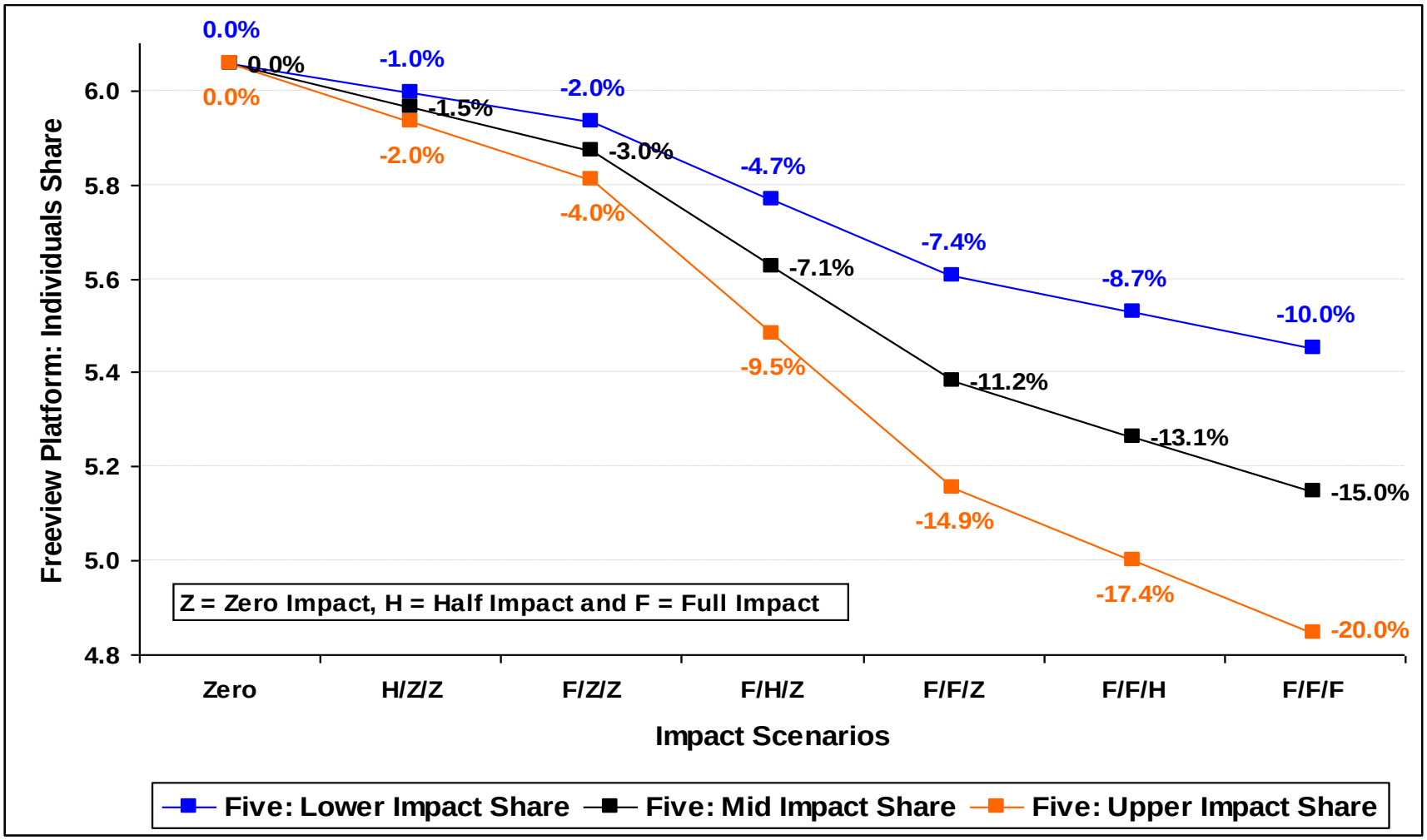
Source: Attentional/BARB

Figure 9: Freeview Platform Impacts Estimates, ITV1



Source: Attentional/BARB

Figure 10: Freeview Platform Impacts Estimates, Five



Source: Attentional/BARB

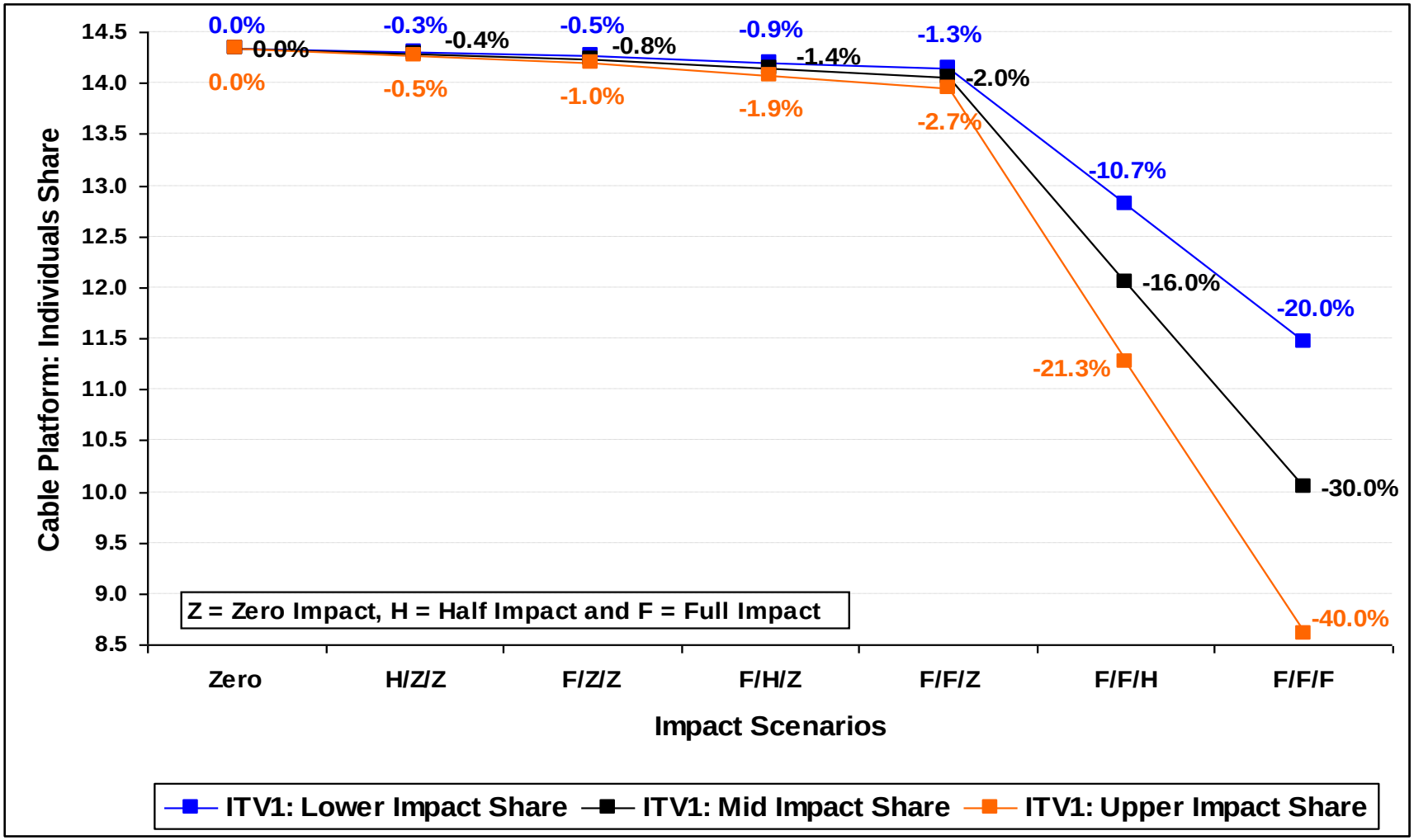
5.3. Cable Platform Impact Estimates

Table 8: Cable Platform Impact Estimates

Cable Platform	ITV1									Five								
	EPG Change Impact Ranges									EPG Change Impact Ranges								
Scenarios (Viewing Impact on Programmes in Share bands: 0-5/5-8/8+)	Low (20%)			Medium (30%)			High (40%)			Low (20%)			Medium (30%)			High (40%)		
	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)
1 Zero/Zero/Zero	**14.34**	0.00	0.0%	**14.34**	0.00	0.0%	**14.34**	0.00	0.0%	**3.80**	0.00	0.0%	**3.80**	0.00	0.0%	**3.80**	0.00	0.0%
2 Half/Zero/Zero	**14.30**	-0.04	-0.3%	**14.28**	-0.05	-0.4%	**14.26**	-0.07	-0.5%	**3.60**	-0.19	-5.1%	**3.51**	-0.29	-7.7%	**3.41**	-0.39	-10.2%
3 Full/Zero/Zero	**14.26**	-0.07	-0.5%	**14.23**	-0.11	-0.8%	**14.19**	-0.15	-1.0%	**3.41**	-0.39	-10.2%	**3.21**	-0.58	-15.4%	**3.02**	-0.78	-20.5%
4 Full/Half/Zero	**14.20**	-0.13	-0.9%	**14.14**	-0.20	-1.4%	**14.07**	-0.27	-1.9%	**3.28**	-0.52	-13.7%	**3.02**	-0.78	-20.5%	**2.76**	-1.04	-27.3%
5 Full/Full/Zero	**14.14**	-0.19	-1.3%	**14.05**	-0.29	-2.0%	**13.95**	-0.39	-2.7%	**3.15**	-0.65	-17.1%	**2.82**	-0.97	-25.7%	**2.50**	-1.30	-34.2%
6 Full/Full/Half	**12.81**	-1.53	-10.7%	**12.04**	-2.30	-16.0%	**11.28**	-3.06	-21.3%	**3.09**	-0.70	-18.6%	**2.74**	-1.06	-27.8%	**2.39**	-1.41	-37.1%
7 Full/Full/Full	**11.47**	-2.87	-20.0%	**10.04**	-4.30	-30.0%	**8.60**	-5.74	-40.0%	**3.04**	-0.76	-20.0%	**2.66**	-1.14	-30.0%	**2.28**	-1.52	-40.0%

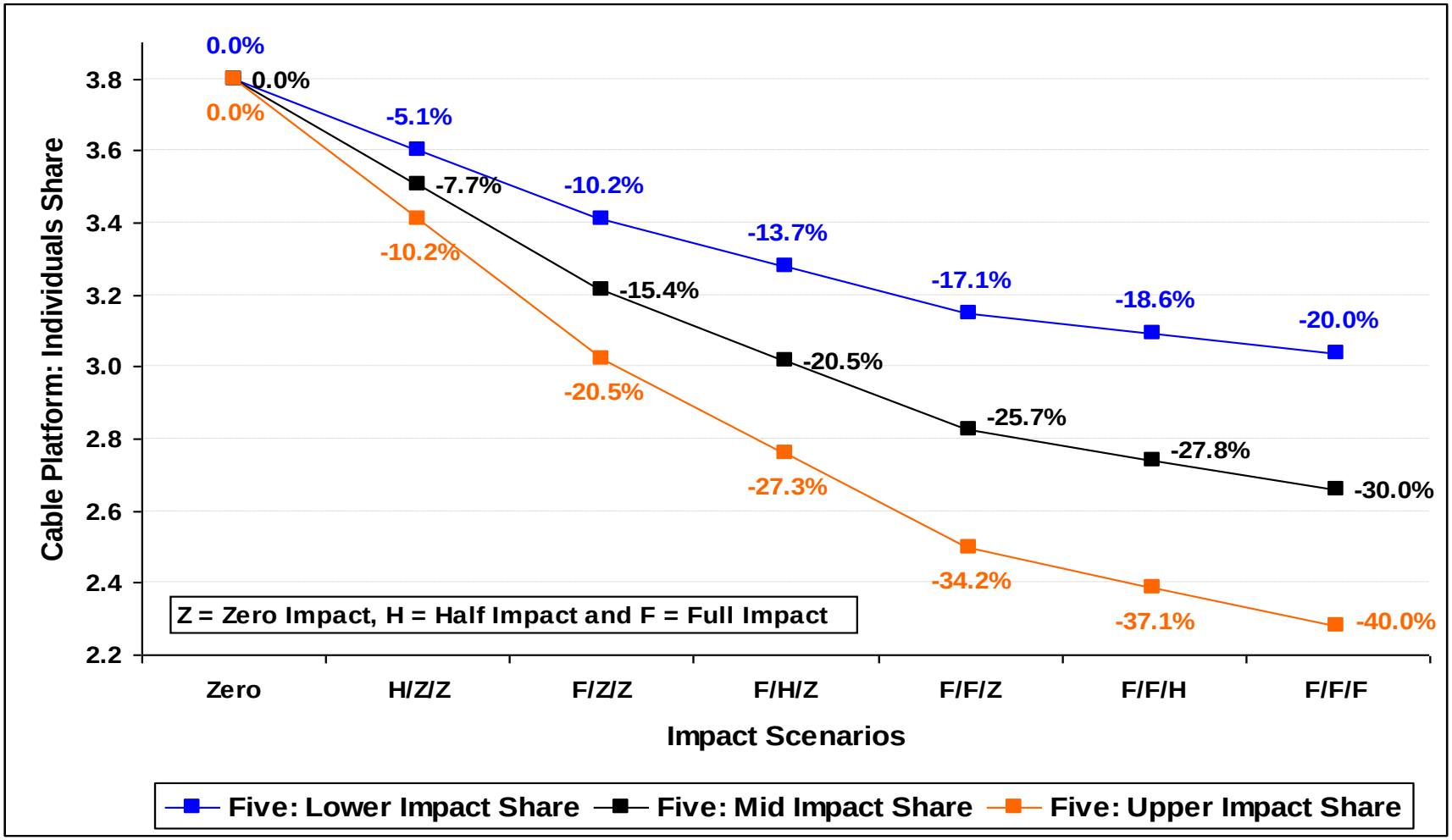
Source: Attentional/BARB

Figure 11: Cable Platform Impact Estimates, ITV1



Source: Attentional/BARB

Figure 12: Cable Platform Impact Estimates, Five



Source: Attentional/BARB

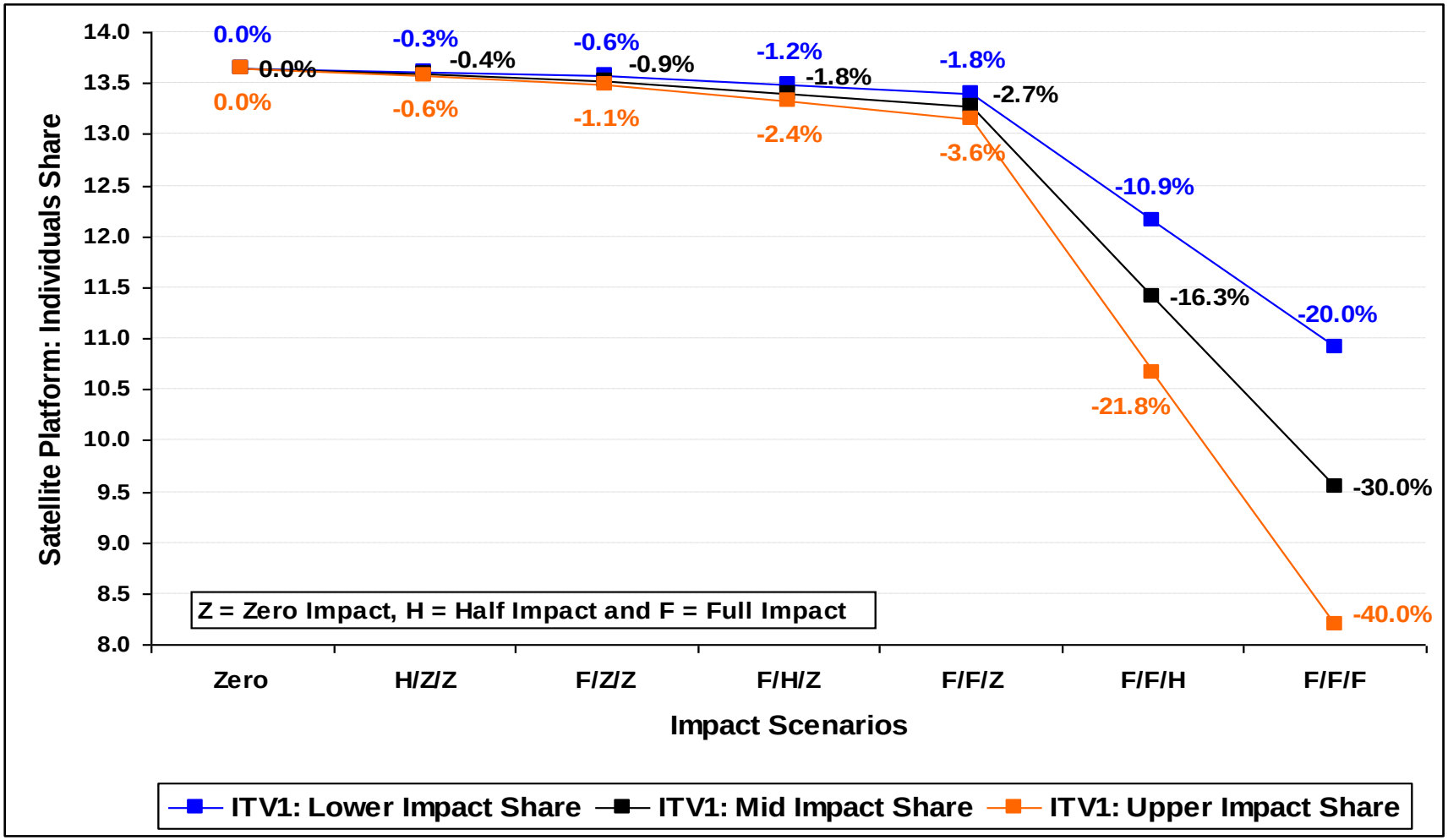
5.4. Satellite Platform Impact Estimates

Table 9: Satellite Platform Impact Estimates

Satellite Platform	ITV1									Five								
	EPG Change Impact Ranges									EPG Change Impact Ranges								
Scenarios (Viewing Impact on Programmes in Share bands: 0-5/5-8/8+)	Low (20%)			Medium (30%)			High (40%)			Low (20%)			Medium (30%)			High (40%)		
	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)
1 Zero/Zero/Zero	**13.64**	0.00	0.0%	**13.64**	0.00	0.0%	**13.64**	0.00	0.0%	**3.37**	0.00	0.0%	**3.37**	0.00	0.0%	**3.37**	0.00	0.0%
2 Half/Zero/Zero	**13.61**	-0.04	-0.3%	**13.59**	-0.06	-0.4%	**13.57**	-0.08	-0.6%	**3.17**	-0.20	-5.9%	**3.07**	-0.30	-8.8%	**2.97**	-0.40	-11.8%
3 Full/Zero/Zero	**13.57**	-0.08	-0.6%	**13.53**	-0.12	-0.9%	**13.49**	-0.15	-1.1%	**2.97**	-0.40	-11.8%	**2.77**	-0.59	-17.6%	**2.57**	-0.79	-23.5%
4 Full/Half/Zero	**13.48**	-0.16	-1.2%	**13.40**	-0.24	-1.8%	**13.32**	-0.32	-2.4%	**2.89**	-0.48	-14.2%	**2.65**	-0.72	-21.3%	**2.41**	-0.96	-28.4%
5 Full/Full/Zero	**13.40**	-0.24	-1.8%	**13.28**	-0.37	-2.7%	**13.16**	-0.49	-3.6%	**2.81**	-0.56	-16.7%	**2.52**	-0.84	-25.0%	**2.24**	-1.12	-33.4%
6 Full/Full/Half	**12.16**	-1.49	-10.9%	**11.41**	-2.23	-16.3%	**10.67**	-2.97	-21.8%	**2.75**	-0.62	-18.3%	**2.44**	-0.93	-27.5%	**2.13**	-1.24	-36.7%
7 Full/Full/Full	**10.92**	-2.73	-20.0%	**9.55**	-4.09	-30.0%	**8.19**	-5.46	-40.0%	**2.69**	-0.67	-20.0%	**2.36**	-1.01	-30.0%	**2.02**	-1.35	-40.0%

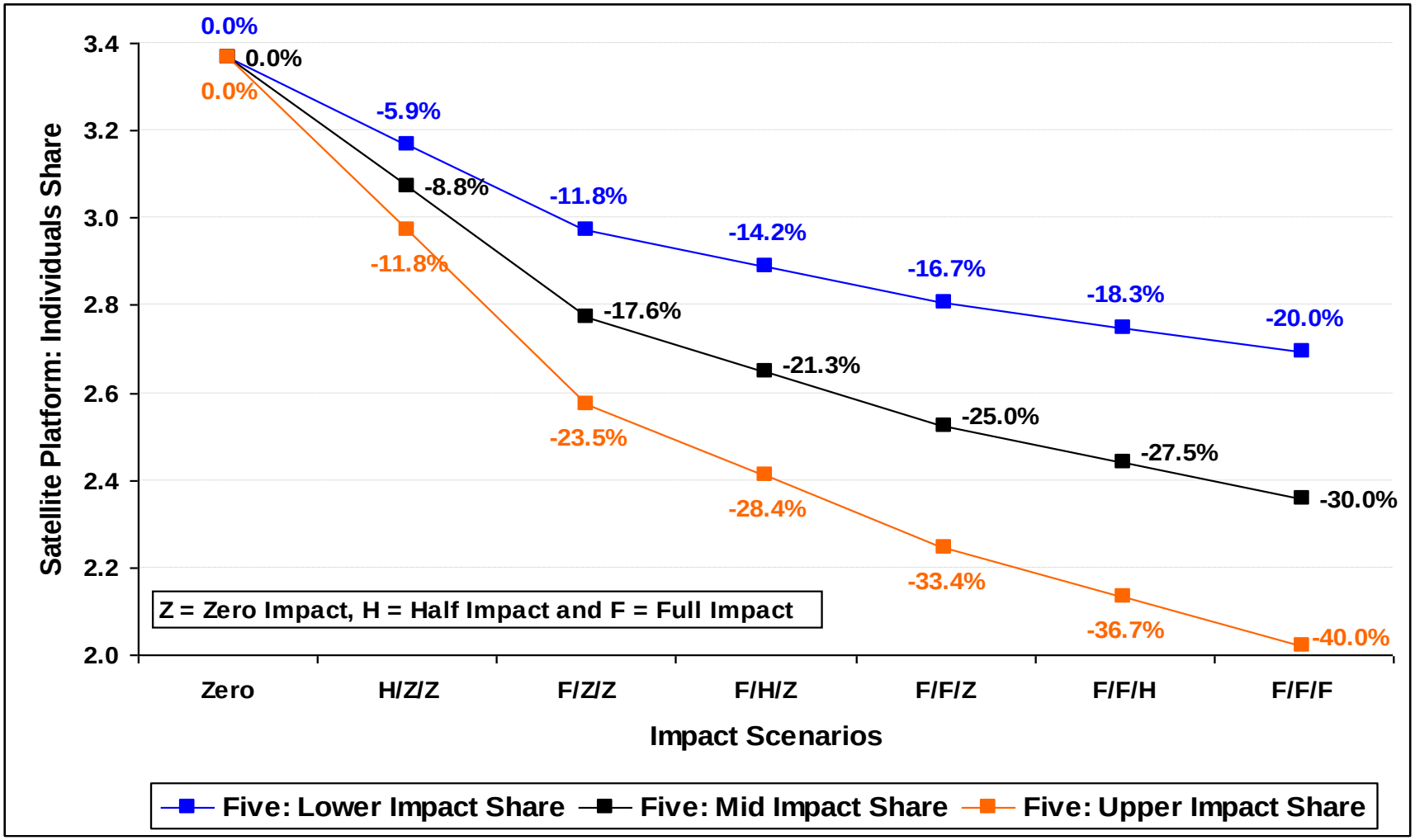
Source: Attentional/BARB

Figure 13: Satellite Platform Impact Estimates, ITV1



Source: Attentional/BARB

Figure 14: Satellite Platform Impact Estimates, Five



Source: Attentional/BARB

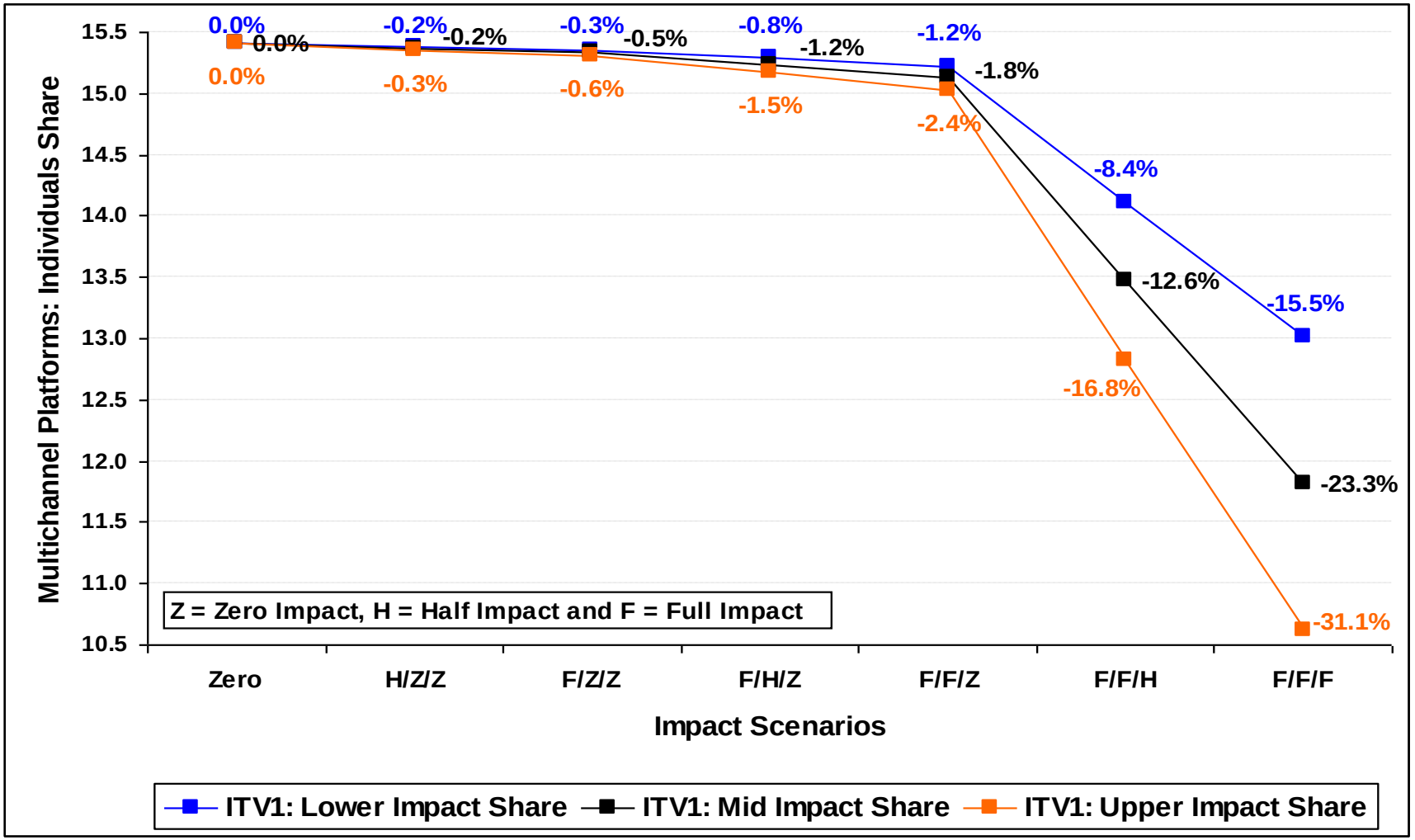
5.5. All Multichannel Platforms Impact Estimates

Table 10: All Multichannel Platforms Impact Estimates

All Multichannel Platforms	ITV1									Five								
	EPG Change Impact Ranges									EPG Change Impact Ranges								
Scenarios	Low			Medium			High			Low			Medium			High		
	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)
1 Zero/Zero/Zero	**15.41**	0.00	0.0%	**15.41**	0.00	0.0%	**15.41**	0.00	0.0%	**4.46**	0.00	0.0%	**4.46**	0.00	0.0%	**4.46**	0.00	0.0%
2 Half/Zero/Zero	**15.38**	-0.02	-0.2%	**15.37**	-0.04	-0.2%	**15.36**	-0.05	-0.3%	**4.31**	-0.15	-3.3%	**4.24**	-0.22	-4.9%	**4.17**	-0.29	-6.5%
3 Full/Zero/Zero	**15.36**	-0.05	-0.3%	**15.33**	-0.07	-0.5%	**15.31**	-0.10	-0.6%	**4.17**	-0.29	-6.5%	**4.02**	-0.44	-9.8%	**3.88**	-0.58	-13.0%
4 Full/Half/Zero	**15.29**	-0.12	-0.8%	**15.23**	-0.18	-1.2%	**15.17**	-0.24	-1.5%	**4.05**	-0.41	-9.2%	**3.84**	-0.62	-13.8%	**3.64**	-0.82	-18.5%
5 Full/Full/Zero	**15.22**	-0.19	-1.2%	**15.12**	-0.28	-1.8%	**15.03**	-0.38	-2.4%	**3.93**	-0.53	-11.9%	**3.66**	-0.80	-17.9%	**3.39**	-1.07	-23.9%
6 Full/Full/Half	**14.11**	-1.29	-8.4%	**13.47**	-1.94	-12.6%	**12.82**	-2.58	-16.8%	**3.86**	-0.60	-13.4%	**3.56**	-0.89	-20.1%	**3.27**	-1.19	-26.8%
7 Full/Full/Full	**13.01**	-2.39	-15.5%	**11.81**	-3.59	-23.3%	**10.62**	-4.79	-31.1%	**3.80**	-0.66	-14.8%	**3.47**	-0.99	-22.2%	**3.14**	-1.32	-29.6%

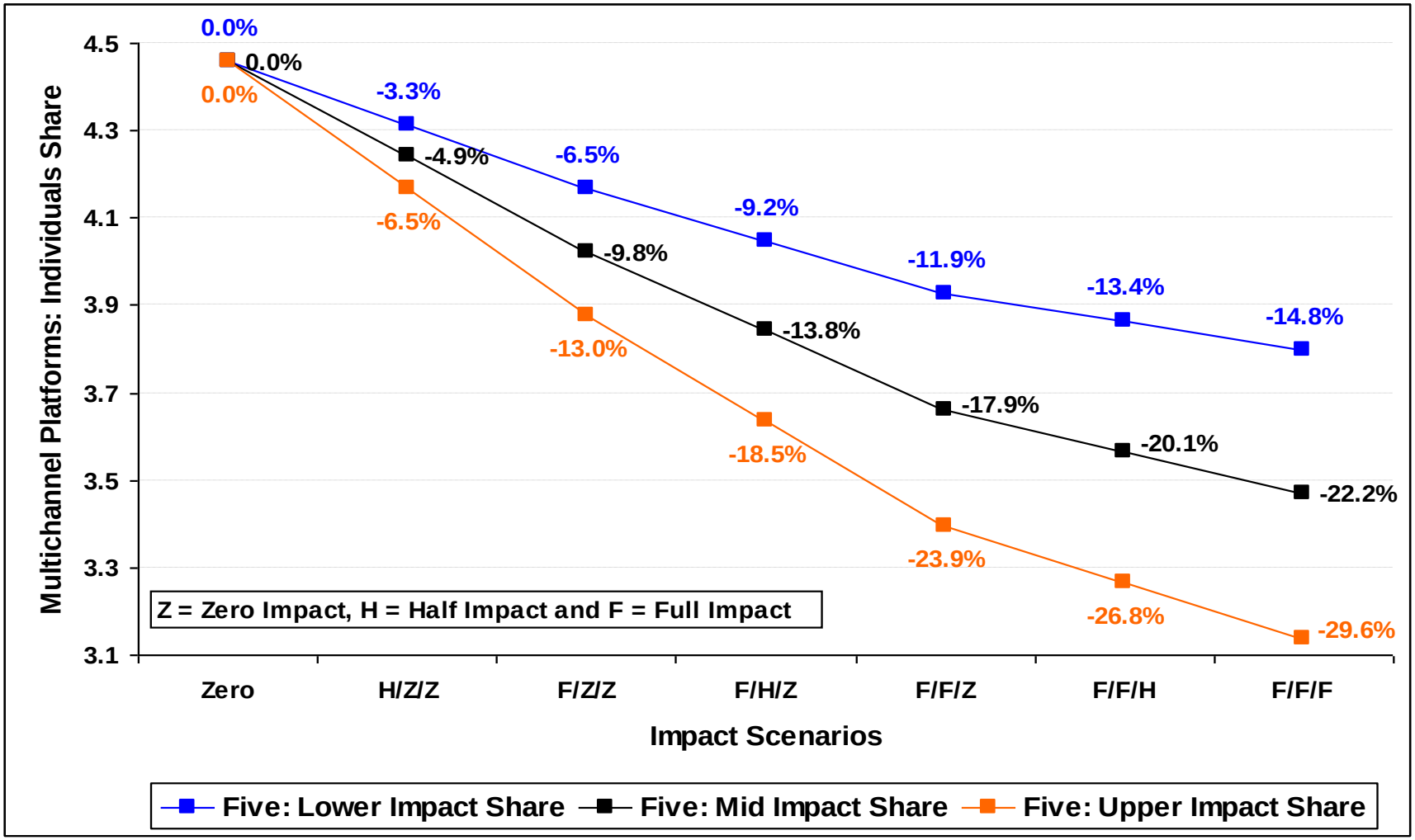
Source: Attentional/BARB

Figure 15: All Multichannel Platforms Impact Estimates, ITV1



Source: Attentional/BARB

Figure 16: All Multichannel Platforms Impact Estimates, Five



Source: Attentional/BARB

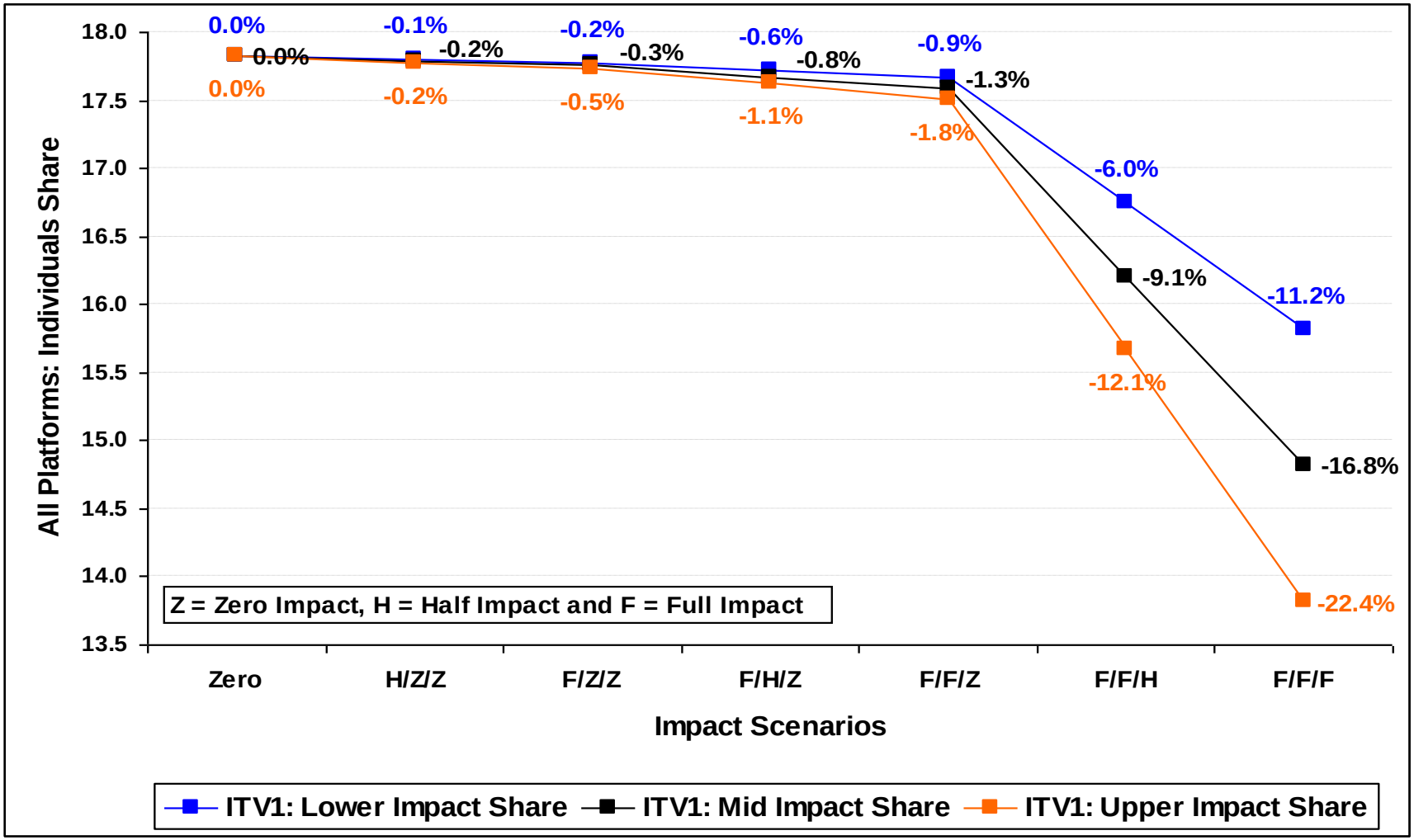
5.6. All Platforms Impact Estimates

Table 11: All Platforms Impact Estimates

All Platforms	ITV1									Five								
	EPG Change Impact Ranges									EPG Change Impact Ranges								
	Low			Medium			High			Low			Medium			High		
Scenarios	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)	Share	Change	Change (%)
1 Zero/Zero/Zero	**17.82**	0.00	0.0%	**17.82**	0.00	0.0%	**17.82**	0.00	0.0%	**4.86**	0.00	0.0%	**4.86**	0.00	0.0%	**4.86**	0.00	0.0%
2 Half/Zero/Zero	**17.80**	-0.02	-0.1%	**17.79**	-0.03	-0.2%	**17.78**	-0.04	-0.2%	**4.74**	-0.12	-2.5%	**4.67**	-0.18	-3.7%	**4.61**	-0.24	-5.0%
3 Full/Zero/Zero	**17.78**	-0.04	-0.2%	**17.76**	-0.06	-0.3%	**17.74**	-0.08	-0.5%	**4.61**	-0.24	-5.0%	**4.49**	-0.36	-7.5%	**4.37**	-0.49	-10.0%
4 Full/Half/Zero	**17.72**	-0.10	-0.6%	**17.67**	-0.15	-0.8%	**17.62**	-0.20	-1.1%	**4.51**	-0.34	-7.1%	**4.34**	-0.52	-10.6%	**4.17**	-0.69	-14.1%
5 Full/Full/Zero	**17.66**	-0.16	-0.9%	**17.59**	-0.24	-1.3%	**17.51**	-0.31	-1.8%	**4.41**	-0.44	-9.2%	**4.19**	-0.67	-13.7%	**3.97**	-0.89	-18.3%
6 Full/Full/Half	**16.74**	-1.08	-6.0%	**16.20**	-1.62	-9.1%	**15.67**	-2.16	-12.1%	**4.36**	-0.50	-10.3%	**4.11**	-0.75	-15.4%	**3.86**	-1.00	-20.5%
7 Full/Full/Full	**15.82**	-2.00	-11.2%	**14.82**	-3.00	-16.8%	**13.82**	-4.00	-22.4%	**4.31**	-0.55	-11.4%	**4.03**	-0.83	-17.0%	**3.75**	-1.10	-22.7%

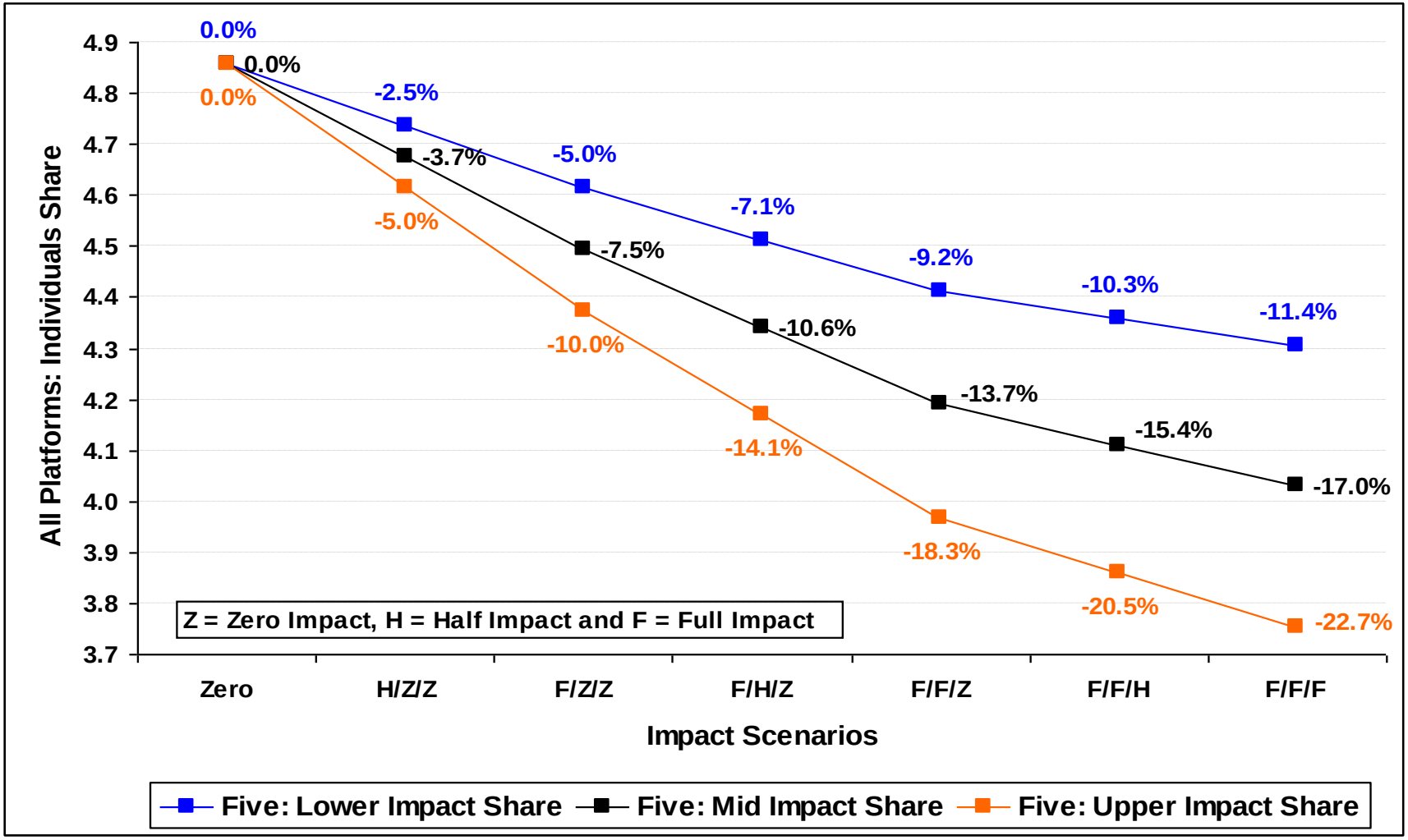
Source: Attentional/BARB

Figure 17: All Platforms Impact Estimates, ITV1



Source: Attentional/BARB

Figure 18: All Platforms Impact Estimates, Five



Source: Attentional/BARB

5.7. Conclusions

The underlying trends in the forecast ranges of the two channels under consideration (ITV1 and Five) are very similar across all the 5 platform options covered (Freeview, Satellite, Cable, All Multichannel and All Platforms). We have therefore provided a detailed discussion of the forecast ranges for All Multichannel platforms, as these combine the EPG change impact ranges of all the other affected platforms (Freeview, Cable and Satellite).[26] The forecast ranges we will be discussing therefore relate to the tables and figures in Section 5.5 above, where Table 10 provides a useful overview of the results. To really understand the implications of these results, however, it is best to focus on Figure 15 (for ITV1) and Figure 16 (for Five), and we will be referring to these two figures throughout the course of the following discussion. The 7 scenario options (Zero, H/Z/Z, F/Z/Z, F/H/Z, F/F/Z, F/F/H and F/F/F) are on the horizontal axis, with Share of viewing on the vertical axis. For each of the 3 EPG change impact ranges (Low, Mid and Upper)[27] there is a Share point forecast for each of the 7 scenarios, giving a range of 21 forecasts per channel. The percentage figures next to each Share point forecast represent the percentage drop in performance relative to the s*tatus quo* (i.e. the percentage difference between the forecast and actual 2009 Share of the channel in question), thus giving the relative performance impact of the loss of EPG prominence for the scenario in question.

Moving from left to right, the 'Zero' EPG change impact scenario represents the most extreme assumption against the thesis that EPG position is likely to have a significant impact on channel performance, whereby both ITV1 and Five are assumed to be totally immune to any adverse performance impacts resulting for a major loss of EPG prominence. Such a strong assumption would, however, seem to be at variance with the empirical evidence, as it means that even the viewing going to titles in the first (i.e. lowest) Impact Share Band would not be subject to any EPG change impacts.

The next scenario, 'H/Z/Z', makes some concessions towards the importance of EPG positioning in that viewing falling into Impact Share Band 1 is assumed to be subject to at least half the total impact suggested by the empirical evidence. As a significant proportion of Five's viewing falls into the first Impact Share Band, this results in a predicted decline of between 3.3% and 6.5% in its Share of viewing. Virtually none of ITV1 viewing falls into the first Impact Share Band, and so it remains almost totally immune to any EPG

[26] The All Multichannel Platforms option also gives the best indication of what the situation is likely to be once digital switchover is complete in 2012, when the Analogue Terrestrial platform will cease to exist. Viewing on the Analogue Terrestrial platform still accounted for a significant minority of ITV1's and Five's viewing in 2009, driven by a combination of people in multichannel homes watching on secondary analogue TV sets, and those people in the declining number of homes without access to multichannel television.

[27] There are also sometimes referred to as Low, Medium and High.

change induced viewing impacts, even under these somewhat more realistic assumptions.

The subsequent, 'F/Z/Z', scenario is much more in line with the empirical evidence in that it assumes that all the viewing in Impact Share Band 1 is subject to the full (empirically derived) EPG change viewing impact, but it assumes that viewing in the higher (second and third) Impact Share Bands is unaffected. This results in a predicted decline of between 6.5% and 13% in Five's Share of viewing, though ITV1 continues to remain almost entirely unaffected.

The fourth, 'F/H/Z', scenario also corresponds closely to the empirical evidence, with the viewing in Impact Share Band 1 being subject to the full impact, but that in Impact Share Band 2, for which the empirical evidence is somewhat less robust, subject to only half of the full viewing impact. This results in a predicted decline of between 9.2% and 18.5% in Five's Share of viewing, though the predicted negative impact on ITV1 still remains very low, with a marginal decline of somewhere between 0.8% and 1.5% in its Share of viewing.

The next scenario, 'F/F/Z', can also be considered to be one of the more empirically grounded options, though it begins to stretch the empirical evidence somewhat by assuming that the viewing in Impact Share Band 2 is now also subject to the full EPG change viewing impact. This results in a predicted decline of between 11.9% and 23.9% in Five's Share of viewing, though the predicted negative impact on ITV1 continues to remain low, with a forecast decline of somewhere between 1.2% and 2.4% in its Share of viewing.

The sixth, 'F/F/H', scenario is the first one to move beyond the empirical evidence in that it assumes that there will now also be a viewing impact (albeit only half the possible total) for Impact Share Band 3. This is not to say that this is necessarily a totally unrealistic or implausible assumption,[28] but simply that it is no longer grounded in the available empirical evidence, and (like the first two scenarios) must therefore be considered to be much more speculative. This is also the first scenario to produce a significant viewing impact for ITV1, with over 90% of its viewing falling into Impact Share Band 3. The final result is a predicted decline of between 8.4% and 16.8% in ITV1's Share of viewing. With only around 20% of its viewing falling into the top Impact Share Band category, however, there is no corresponding large jump in the impact on Five, which is only up by a relatively small amount on the previous scenario, with a predicted decline of between 13.4% and 26.8% in its Share of viewing.

[28] Indeed, the Impact Share Band thresholds have been set low to comply with the empirical evidence, and the top Impact Share Band is therefore likely to include many titles that would, by ITV1's standards, be considered mediocre or even poor performers. Such programmes are unlikely to be high on the list of titles that viewers are prepared to seek out, and so a case can be made (though we have no direct empirical evidence to support this) for arguing that such shows would be subject to a negative viewing impact resulting from a loss of EPG prominence.

The final, 'F/F/F', scenario makes the most extreme assumptions in support of an EPG change induced viewing impact, in that all viewing is assumed to be subject to the full impact. This therefore makes no allowance for the quality of the content or brand strength of the channels under consideration. The result is a predicted decline in performance of between 14.8% and 29.6% for Five, and a predicted decline in performance of between 15.5% and 31.1% for ITV1.

Each of the seven scenario options for ITV1 and Five is a potential outcome, and none can be entirely ruled out. However, what we can say is that some scenarios are more grounded in the available empirical evidence than others. In view of this evidence, Scenarios 'Zero' and (to a lesser extent) 'H/Z/Z' do not seem credible, as they rely on the assumption that viewing to programmes with a performance level for which a loss of EPG prominence has been shown to have a significant viewing impact would not be affected at all, or only partially affected. Scenarios 'F/Z/Z', 'F/H/Z' and 'F/F/Z' are more grounded in the empirical evidence base and would therefore appear to be the most credible of the available options. With Scenarios 'F/F/H' and 'F/F/F' we are again on much more speculative ground, and while certainly not implausible (notably in the case of 'F/F/H'), there is a lack of directly observable benchmarks with which to support these outcomes.

The middle options, represented by Scenarios 'F/Z/Z', 'F/H/Z' and 'F/F/Z', therefore constitute the most credible outcomes given the available empirical evidence for the likely viewing impact of a loss of EPG prominence. For Five, the range of predicted outcomes generated by these central scenarios gives a minimum performance loss of 6.5% and a maximum loss of 23.9%. For ITV1, on the other hand, the corresponding minimum predicted performance loss is close to negligible at 0.3%, with the maximum predicted loss still remaining relatively small at 2.4%. With this in mind, Scenario 'F/F/H' is also noteworthy, as it the first scenario for which the impact on ITV1 ceases to be small, with a predicted performance loss of between 8.4% and 16.8%, and though necessarily much more speculative, it cannot be ruled out as a possible outcome. The corresponding loss under the same scenario for Five is somewhere between 13.4% and 26.8%.

6. Appendices

Attentional has been collecting and analysing data on EPG changes for a number of years, and these now constitute a major proprietary resource for the company. The analysis underpinning Section 4 of this report has been drawn from this proprietary resource and while the results and a summary of the analysis have been included in Section 4, the underlying analysis remains confidential and proprietary to Attentional and should not be published without our prior consent. Consequently, some sections of these appendices, specifically Sections 6.3 to 6.11, have been marked as confidential and not for publication.

6.1. Appendix A: Overview Tables for the Freeview, Virgin Media and Sky EPGs

Table 12: Freeview EPG Overview (November 2009)

Freeview EPG[29] Genre	EPG Channel Number	No. of Channels	No. of BARB Measured Channels	Individuals Share of Viewing (DTT Platform)
General Entertainment	1 to 45	39	30	91.46
Children	70 to 72	3	3	3.67
News	80 to 89	10	5	1.94
Adult	93 to 99	7	0	-
Text Services[30]	100 to 109	10	0	-
Hidden/Non-Unique Access[31]	300 to 310	8	0	-
Total	**1 to 310**	**77**	**38**	**97.08**

Source: Attentional/BARB

[29] It should be noted that for the Freeview EPG there are some minor regional variations, and for consistency we have therefore based the analysis on the most commonly available variant. As the analysis is focused on television we have excluded the radio stations. HD channels have also started appearing on a regional basis (starting with BBCHD and ITV1HD at EPG channel number 50 and 51 respectively) from December 2009 onwards, but this falls outside the scope of our regression analysis, which is based on November 2009 data. The currently very limited availability of the HD channels on the DTT platform would in any case have excluded them from the analysis, as it is based the most commonly available EPG variant.

[30] These are text based services like Teletext Holidays, Sky Text and Mobilizer.

[31] This section includes TopUp Anytime and other interactive services.

Table 13 Freeview EPG Overview (November 2009), Entertainment Section

Freeview EPG Page (Entertainment Section)	Channel Name	Availability	BARB Measured?
Page 1	BBC One	Free-to-air	Yes
	BBC Two	Free-to-air	Yes
	ITV1	**Free-to-air**	**Yes**
	Channel 4	Free-to-air	Yes
	Five	**Free-to-air**	**Yes**
Page 2	ITV2	Free-to-air	Yes
	BBC Three	Free-to-air	Yes
	BBC Four	Free-to-air	Yes
	ITV3	Free-to-air	Yes
	Sky3	Free-to-air	Yes
Page 3	Yesterday	Free-to-air	Yes
	Channel 4 +1	Free-to-air	Yes
	More4	Free-to-air	Yes
	Film4	Free-to-air	Yes
	QVC	Free-to-air	No
Page 4	G.O.L.D.	Subscription	Yes
	4Music	Free-to-air	Yes
	Dave	Free-to-air	Yes
	Virgin1	Free-to-air	Yes
	VIVA	Free-to-air	Yes
Page 5	Ideal World	Free-to-air	No
	bid tv	Free-to-air	No
	ITV4	Free-to-air	Yes
	Dave ja vu	Free-to-air	Yes
	Home	Subscription	Yes
Page 6	E4	Free-to-air	Yes
	E4 +1	Free-to-air	Yes
	Fiver	Free-to-air	Yes
	Five USA	Free-to-air	Yes
	The Big Deal	Free-to-air	No
Page 7	ITV2 +1	Free-to-air	Yes
	ESPN	Subscription	Yes
	Virgin1 +1	Free-to-air	Yes
	Create and Craft	Free-to-air	No
	price-drop tv	Free-to-air	No
Page 8	Quest	Free-to-air	Yes
	Super Casino	Free-to-air	No
	Rocks & Co.	Free-to-air	No
	National Lottery Xtra	Free-to-air	No

Note: Most basic set top box DTT receivers list 5 channels per EPG page, which is what we have used in the table above, though it is worth noting that televisions with built in DTT receivers may list up to 12 channels per page.

Table 14: Virgin Media EPG Overview (November 2009)

Virgin Media EPG[32] Genre	EPG Channel Number	No. of Channels	No. of BARB Measured Channels	Individuals Share of Viewing (Cable Platform)
Entertainment[33]	100 to 172	61	55	71.43
Factual	203 to 242	20	19	3.36
Lifestyle	260 to 285	16	16	2.17
Music	300 to 342	18	16	1.39
Movies	400 to 445	19	17	3.13
Adult	470 to 497	13	0	-
Sport	511 to 545	17	15	3.58
News	601 to 620	7	4	1.16
Kids	701 to 737	21	20	8.12
Shopping	740 to 756	8	0	-
International	802 to 833	13	0	-
Entertainment (continued)[34]	851 to 871	13	0	-
Total	**100 to 871**	**226**	**162**	**94.35**

Source: Attentional/BARB

[32] It should be noted that for the Virgin Media EPG there are some minor regional variations as well as small differences between the channel selections available to former NTL and Telewest customers, and for consistency we have therefore based the analysis on the most commonly available variant. As the analysis is focused on television we have excluded the radio stations. There is also an HD genre option which has not been listed as it brings together all the HD channels from the different genre sections of the EPG and would therefore result in double counting. Virgin Media's On-Demand viewing options are accessed through a separate menu and are therefore not covered by the EPG list, which is accessed through the TV Guide option.

[33] It should be noted that, in the Virgin Media channel genre options menu, the All Channel option, at the top of the list, also doubles up as the Entertainment genre option as, unlike for the other genres, this isn't listed separately in the genre list.

[34] These are the regional and audio description variants of the Terrestrial channels and accessed through the All Channels option, where they can be found near the bottom of the list just before the radio stations.

Table 15: Virgin Media EPG Overview (November 2009); Entertainment Section

Virgin Media EPG Page (Entertainment Section)	Channel Name	Availability (Subscription Package)	BARB Measured?
Page 1	On Demand Previews	TV Size M	No
	BBC One	TV Size M	Yes
	BBC Two	TV Size M	Yes
	ITV1	**TV Size M**	**Yes**
	Channel 4	TV Size M	Yes
	Five	**TV Size M**	**Yes**
	BBC Three	TV Size M	Yes
Page 2	BBC Four	TV Size M	Yes
	BBC HD	TV Size M	Yes
	Living	TV Size M+	Yes
	Living HD	TV Size XL	No
	Living +1	TV Size M+	Yes
	Livingit	TV Size L	Yes
	ITV2	TV Size M	Yes
Page 3	ITV3	TV Size M	Yes
	ITV4	TV Size M	Yes
	Virgin Central	TV Size M	No
	Virgin1	TV Size M	Yes
	Virgin1 +1	TV Size M	Yes
	Sky1	TV Size M+	Yes
	Sky2	TV Size M+	Yes
Page 4	Sky3	TV Size M	Yes
	Watch	TV Size L	Yes
	Watch +1	TV Size XL	Yes
	G.O.L.D.	TV Size M+	Yes
	G.O.L.D. +1	TV Size L	Yes
	Dave	TV Size M	Yes
	Dave ja vu	TV Size M	Yes
Page 5	Alibi	TV Size L	Yes
	Alibi +1	TV Size XL	Yes
	Comedy Central	TV Size L	Yes
	Comedy Central +1	TV Size XL	Yes
	Comedy Central Extra	TV Size XL	Yes
	Sci Fi	TV Size L	Yes
	Bravo	TV Size M+	Yes

Virgin Media EPG Page (Entertainment Section)	Channel Name	Availability (Subscription Package)	BARB Measured?
Page 6	Bravo +1	TV Size L	Yes
	Bravo 2	TV Size L	Yes
	Challenge	TV Size M+	Yes
	Challenge +1	TV Size XL	Yes
	Challenge Jackpot	TV Size M	No
	Channel 4 +1	TV Size M	Yes
	E4	TV Size M	Yes
Page 7	E4 +1	TV Size M	Yes
	More4	TV Size M	Yes
	Channel 4 HD	TV Size M	No
	CBS Reality	TV Size XL	Yes
	Zone Horror	TV Size XL	Yes
	Five USA	TV Size M	Yes
	Fiver	TV Size M	Yes
Page 8	Current TV	TV Size M+	Yes
	E! Entertainment	TV Size L	Yes
	FX	TV Size XL	Yes
	FX HD	TV Size XL	No
	Living +2	TV Size M+	Yes
	Livingit +1	TV Size L	Yes
	Hallmark Channel	TV Size M+	Yes
Page 9	Hallmark Channel +1	TV Size L	Yes
	Diva TV	TV Size XL	Yes
	Diva TV +1	TV Size XL	Yes
	S4C	TV Size M	Yes
	S4C2	TV Size M	No
	MTV R	TV Size XL	Yes
	DMAX	TV Size XL	Yes

Note: Higher tier packages include all channels available on a lower tiers subscription.

Table 16: SKY EPG Overview (November 2009)

Sky EPG[35] Genre	EPG Channel Number	No. of Channels	No. of BARB Measured Channels	Individuals Share of Viewing (DSAT Platform)
Entertainment	101 to 214	96	76	69.15
Lifestyle and Culture	240 to 282	38	31	1.93
Movies	301 to 344	40	26	4.57
Music	350 to 384	28	27	2.00
Sport	401 to 480	27	16	5.51
News	501 to 516	16	5	1.43
Documentaries	520 to 557	29	26	2.92
Religious	580 to 595	16	1	0.01
Kids	601 to 631	31	28	8.07
Shopping	640 to 683	36	1	0.00
Box Office (pay-per-view)[36]	700 to 761	57	0	-
International	780 to 844	59	2	0.10
Gaming and Dating	860 to 878	11	0	-
Specialist	880 to 888	5	0	-
Adult	900 to 966	58	0	-
Entertainment (continued)[37]	971 to 995	25	0	-
Sky Information[38]	899, 970, 996, 998, 999	5	0	-
Total	**101 to 999**	**577**	**239**	**95.70**

Source: Attentional/BARB

[35] It should be noted that for the Sky EPG there are some minor variations between the different UK nations, and for consistency we have therefore based the analysis on the most commonly available variant. As the analysis is focused on television we have also excluded the radio stations.

[36] The Sky Box Office pay-per-view channels are appended to the Movies section if accessed though the Movies genre option, but are much further down the EPG in the All Channels option.

[37] These are largely the regional and audio description variants of the terrestrial channels and are appended to the Entertainment section if accessed through the Entertainment genre option, but are much further down the EPG in the All Channels option.

[38] These are channels like the Sky Customer Channel that are only listed in the All Channels option.

Table 17: SKY EPG Overview (November 2009); Entertainment Section

SKY EPG Page (Entertainment Section)	Channel Name	Availability (Subscription Package)	BARB Measured?
Page 1	BBC One	Free-to-air	Yes
	BBC Two	Free-to-air	Yes
	ITV1	**Free-to-air**	**Yes**
	Channel 4	Free-to-air	Yes
	Five	**Free-to-air**	**Yes**
	Sky1	Variety Pack	Yes
	Sky2	Variety Pack	Yes
	Sky3	Free-to-View	Yes
	Watch	Variety Pack	Yes
	G.O.L.D.	Variety Pack	Yes
Page 2	Dave	Variety Pack	Yes
	Living	Variety Pack	Yes
	Living +1	Variety Pack	Yes
	Livingit	Variety Pack	Yes
	BBC Three	Free-to-Air	Yes
	BBC Four	Free-to-Air	Yes
	ITV2	Free-to-Air	Yes
	ITV3	Free-to-Air	Yes
	ITV4	Free-to-Air	Yes
	Virgin1	Variety Pack	Yes
Page 3	Virgin1 +1	Variety Pack	Yes
	Bravo	Variety Pack	Yes
	Bravo +1	Variety Pack	Yes
	Challenge	Variety Pack	Yes
	Comedy Central	Variety Pack	Yes
	Comedy Cent +1	Variety Pack	Yes
	Comedy Cent Ext	Variety Pack	Yes
	Sci Fi	Variety Pack	Yes
	Hallmark Channel	Variety Pack	Yes
	ITV2 +1	Free-to-Air	Yes
Page 4	Alibi	Variety Pack	Yes
	G.O.L.D. +1	Variety Pack	Yes
	S4C	Free-to-Air	Yes
	Channel 4 +1	Free-to-Air	Yes
	E4	Free-to-Air	Yes
	E4 +1	Free-to-Air	Yes
	More4	Free-to-Air	Yes
	More4 +1	Free-to-Air	Yes
	Channel 4 HD	Free-to-View	No
	BBC HD	Free-to-Air	Yes

SKY EPG Page (Entertainment Section)	Channel Name	Availability (Subscription Package)	BARB Measured?
Page 5	DMAX	Variety Pack	Yes
	DMAX +1	Variety Pack	Yes
	CBS Reality	Free-to-Air	Yes
	CBS Reality +1	Free-to-Air	Yes
	CBS Action	Free-to-Air	Yes
	CBS Drama	Free-to-Air	Yes
	Hallmark Channel +	Variety Pack	Yes
	E!	Variety Pack	Yes
	Challenge +1	Variety Pack	Yes
	Bravo 2	Variety Pack	Yes
Page 6	QUEST	Variety Pack	Yes
	Watch +1	Variety Pack	Yes
	Bio.	Knowledge Pack	Yes
	Film 24	Free-to-Air	Yes
	Dave ja vu	Variety Pack	Yes
	Comedy Cen Ex+1	Variety Pack	Yes
	MTV®	Music Pack	Yes
	FX	Variety Pack	Yes
	FX+	Variety Pack	Yes
	Information TV	Free-to-Air	No
Page 7	QUEST +1	Variety Pack	Yes
	BBC Alba	Free-to-Air	No
	Sky1 HD	HD Pack	No
	My Channel	Free-to-Air	No
	Living +2	Variety Pack	Yes
	Livingit +1	Variety Pack	Yes
	Five USA	Free-to-View	Yes
	Five USA +1	Free-to-View	Yes
	Fiver	Free-to-View	Yes
	Fiver +1	Free-to-View	Yes
Page 8	Men & Motors	Free-to-Air	Yes
	ITV3 +1	Free-to-Air	Yes
	ITV4 +1	Free-to-Air	Yes
	Current TV	Style & Cult Pack	Yes
	BEN	Free-to-Air	No
	AIT International	Free-to-Air	No
	True Entertain	Free-to-Air	Yes
	Open Access 2	Free-to-Air	No
	Open Access 3	Free-to-Air	No
	BET	Free-to-Air	Yes

SKY EPG Page (Entertainment Section)	Channel Name	Availability (Subscription Package)	BARB Measured?
Page 9	FX HD	HD Pack	No
	Propeller TV	Free-to-Air	No
	BET +1	Free-to-Air	Yes
	Open Heaven TV	Free-to-Air	No
	Controversial TV	Free-to-Air	No
	Unexplained Chan	Free-to-Air	Yes
	NTA International	Free-to-Air	No
	Channel M	Free-to-Air	No
	HiTV	Free-to-Air	No
	Sci Fi +1	Variety Pack	Yes
Page 10	DMAX +2	Variety Pack	Yes
	OBE TV	Free-to-Air	No
	Alibi +1	Variety Pack	Yes
	Bio. HD	HD Pack	No
	Sumo TV	Free-to-Air	No
	Sci Fi HD	HD Pack	No

6.2. Appendix B: Relative EPG Placement Performance Comparison Tables

Table 18: Relative EPG Placement Performance Comparisons, Virgin Media versus Sky (2009)

Virgin Media EPG Page (Entertainment Section)	SKY EPG Page (Entertainment Section)	Channel Name	Virgin Media Subscription Package	Sky Subscription Package	Individuals Share on Cable Platform (2009)	Individuals Share on Satellite Platform (2009)	Relative Page Placement: Sky vs. Virgin	% Share Difference: Sky vs. Virgin
Page 1	N/A	On Demand Prev.	TV Size M	N/A	N/A	N/A	N/A	N/A
	Page 1	BBC One	TV Size M	Free-to-air	14.66	15.47	Same page	5.6%
		BBC Two	TV Size M	Free-to-air	4.78	4.85	Same page	1.6%
		ITV1	TV Size M	Free-to-air	14.07	13.65	Same page	-3.0%
		Channel 4	TV Size M	Free-to-air	5.01	4.97	Same page	-0.8%
		Five	TV Size M	Free-to-air	3.77	3.38	Same page	-10.4%
	Page 2	**BBC Three**	**TV Size M**	**Free-to-Air**	**1.55**	**0.97**	**1 page down**	**-37.6%**
Page 2	Page 2	BBC Four	TV Size M	Free-to-Air	0.54	0.31	Same page	-42.2%
	Page 4	BBC HD	TV Size M	Free-to-Air	0.18	0.18	2 pages down	-2.5%
	Page 2	Living	TV Size M+	Variety Pack	1.21	0.92	Same page	-24.3%
	N/A	Living HD	TV Size XL	N/A	N/A	N/A	N/A	N/A
	Page 2	Living +1	TV Size M+	Variety Pack	0.68	0.48	Same page	-28.3%
		Livingit	TV Size L	Variety Pack	0.54	0.36	Same page	-32.2%
		ITV2	TV Size M	Free-to-Air	2.17	1.67	Same page	-22.9%

Source: Attentional/BARB

Table 19: Relative EPG Placement Performance Comparisons, Sky versus Virgin Media (2009)

SKY EPG Page (Entertainment Section)	Virgin Media EPG Page (Entertainment Section)	Channel Name	Sky Subscription Package	Virgin Media Subscription Package	Individuals Share on Satellite Platform (2009)	Individuals Share on Cable Platform (2009)	Relative Page Placement: Virgin vs. Sky	% Share Difference: Virgin vs. Sky
Page 1	Page 1	BBC One	Free-to-air	TV Size M	15.47	14.66	Same page	-5.3%
		BBC Two	Free-to-air	TV Size M	4.85	4.78	Same page	-1.6%
		ITV1	Free-to-air	TV Size M	13.65	14.07	Same page	3.1%
		Channel 4	Free-to-air	TV Size M	4.97	5.01	Same page	0.8%
		Five	Free-to-air	TV Size M	3.38	3.77	Same page	11.6%
	Page 3	**Sky1**	**Variety Pack**	**TV Size M+**	**2.18**	**1.91**	**2 pages down**	**-12.1%**
		Sky2	**Variety Pack**	**TV Size M+**	**0.86**	**0.86**	**2 pages down**	**0.1%**
	Page 4	**Sky3**	**Free-to-View**	**TV Size M**	**0.58**	**0.50**	**3 pages down**	**-14.2%**
		Watch	**Variety Pack**	**TV Size L**	**0.87**	**0.50**	**3 pages down**	**-42.7%**
		G.O.L.D.	**Variety Pack**	**TV Size M+**	**1.00**	**0.80**	**3 pages down**	**-20.3%**
Page 2	Page 4	Dave	Variety Pack	TV Size M	0.92	0.66	2 pages down	-28.2%
	Page 2	Living	Variety Pack	TV Size M+	0.92	1.21	Same page	32.0%
		Living +1	Variety Pack	TV Size M+	0.48	0.68	Same page	39.6%
		Livingit	Variety Pack	TV Size L	0.36	0.54	Same page	47.5%
	Page 1	BBC Three	Free-to-Air	TV Size M	0.97	1.55	1 page up	60.3%
	Page 2	BBC Four	Free-to-Air	TV Size M	0.31	0.54	Same page	72.9%
		ITV2	Free-to-Air	TV Size M	1.67	2.17	Same page	29.7%
	Page 3	ITV3	Free-to-Air	TV Size M	1.08	1.23	1 page down	13.8%
		ITV4	Free-to-Air	TV Size M	0.71	0.84	1 page down	18.6%
		Virgin1	Variety Pack	TV Size M	0.36	0.60	1 page down	68.0%

Source: Attentional/BARB

6.3. Appendix C: Summary Tables of EPG Reshuffles Analysed by Platform [confidential and not for publication]

[✂]

6.4. Appendix D: Summary Tables of Final Viewing Impacts Incorporating All Confounding Influences Where Possible [confidential and not for publication]

[✂]

6.5. Appendix E: Sky EPG Impact Chart [confidential and not for publication]

[✂]

6.6. Appendix F: Analytical Output Tables and Charts for EPG Change Examples where the Evidence in Support of a Viewing Impact is Highly Significant [confidential and not for publication]

[✂]

6.7. Appendix G: Analytical Output Tables and Charts for EPG Change Examples where the Evidence in Support of a Viewing Impact is Significant [confidential and not for publication]

[✂]

6.8. Appendix H: Analytical Output Tables and Charts for EPG Change Examples where the Evidence in Support of a Viewing Impact is Weakly Significant [confidential and not for publication]

[✂]

6.9. Appendix I: Analytical Output Tables and Charts for EPG Change Examples where the Evidence, Both For and Against a Viewing Impact, is Inconclusive [confidential and not for publication]

[✂]

6.10. Appendix J: Analytical Output Tables and Charts for EPG Change Examples where the Evidence does Not Support a Viewing Impact [confidential and not for publication]

[✂]

6.11. Appendix K: Analytical Output Tables and Charts for 3e on Sky in Ireland [confidential and not for publication]

[✂]